NASA Conference Publication 10042

Twenty-Second Annual NASA Supply and Equipment Management Conference

Proceedings of a Conference held at
NASA Kennedy Space Center
Cocoa Beach, Florida
December 5-7, 1989

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SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE
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NASA
National Aeronautics and
Space Administration

Supply, Transportation & Services Division

Supply Branch

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STATUS OF ACTIONS FROM 1988 CONFERENCE

BILLIE WILCHEK, MANAGER
CONTRACT PROPERTY PROGRAMS
DECEMBER 5, 1989

1988 S & E CONFERENCE ACTIONS

1. FY89 tag requirements forecast
2. Center additions to standard agency sensitive items list

2

3. Updated shipping addresses and transfer contacts
4. NEMS transactions use list

4

1988 S & E CONFERENCE ACTIONS

(CONTINUED)

5. Appeals of employee negligence and liability for equipment losses
6. NASA Form 1602 user signatures
7. Refinements to NASA Form 1602

1988 S & E CONFERENCE ACTIONS
(CONTINUED)

4

8. Expanded distribution lists

9. On-site contractor productivity impediments

10. Proposed method of estimating cost to sell and abandonment/destruction cost of low value surplus property

1988 S & E CONFERENCE ACTIONS
(CONTINUED)

11. Separate reporting by component installation supply activities

5

12. Use of nonstocked item report data in Federal cataloging actions

NEW AND CONTINUING INITIATIVES

6

NEW AND CONTINUING INITIATIVES

1. NASA PROPERTY DISPOSAL MANAGEMENT SYSTEM (NPDMS)
2. NASA SUPPLY MANAGEMENT SYSTEM (NSMS)
3. NASA EQUIPMENT MANAGEMENT SYSTEM (NEMS)
4. NASA INDUSTRIAL PROPERTY MANAGEMENT INFORMATION SYSTEM (NIPMIS 3)

NEW AND CONTINUING INITIATIVES
(CONTINUED)

5. PERFORMANCE MEASURES
6. FUNCTIONAL REVIEWS
7. STRATEGIC PLANNING
8. INTEGRATED LOGISTICS SUPPORT
9. TRAINING

NEW AND CONTINUING INITIATIVES
(CONTINUED)

10. BUDGET AUGMENTATION

11. WAREHOUSING ANALYSIS

12. CONTRACT PROPERTY HANDBOOK

13. PRESIDENT'S COUNCIL ON MANAGEMENT IMPROVEMENT (PCMI) PROJECT

~~11~~

S&EM General Session

NASA
SUPPLY
MANAGEMENT
SYSTEM

- Jeff Sutton / NIE -- NSMS Functional Sponsor
- Pat Sporn / NTI -- NSMS Program Technical Manager
- James A. Forney / MSFC -- NSMS Development Installation Project Manager
- Bonnie Hankins / BCSS -- NSMS Project Manager

Supply & Equipment Management Conference December 5, 1989

S&EM General Session

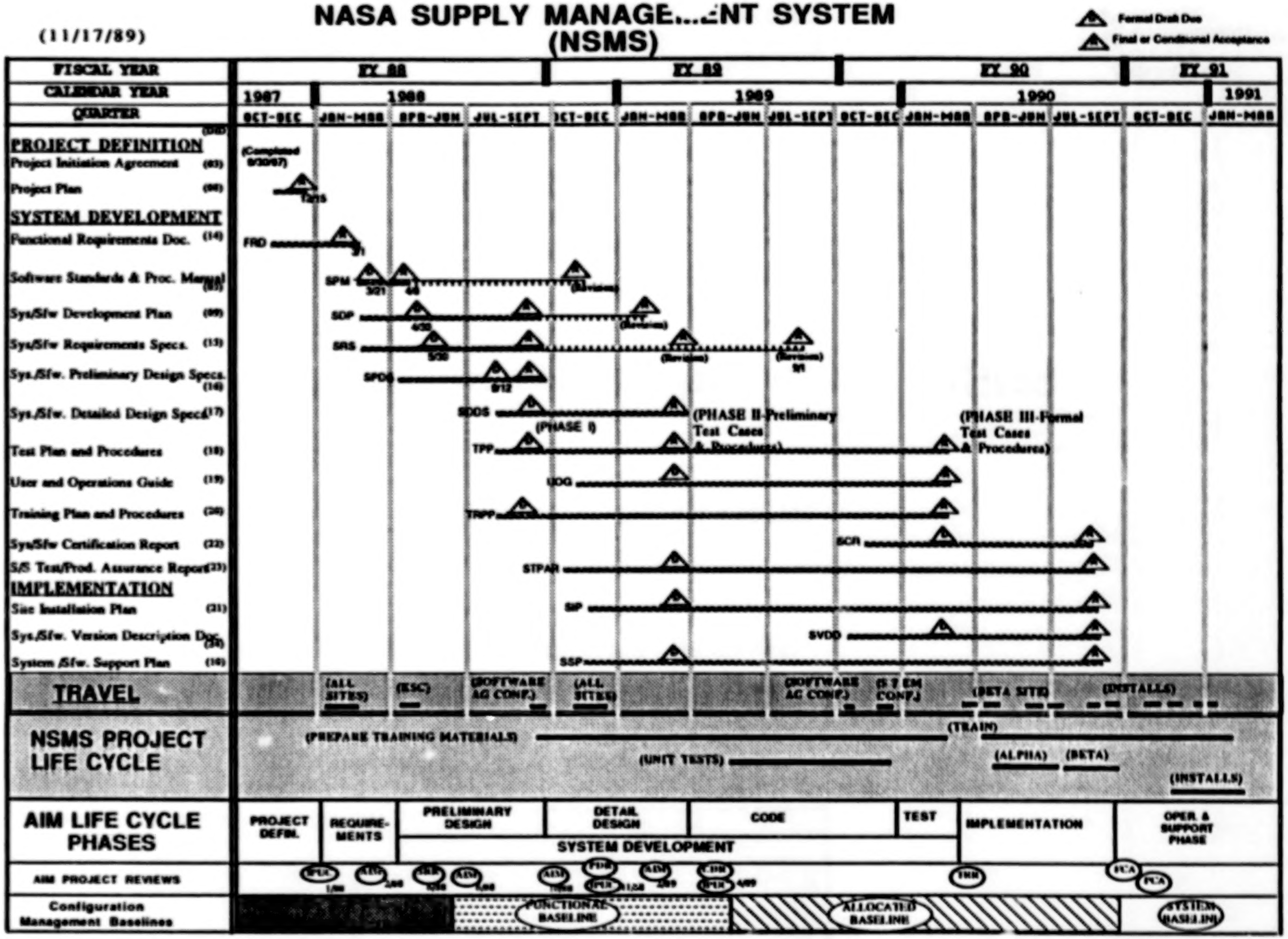
- NSMS Development Status
- NSMS Installation Schedule
- Use of CASE Technology during NSMS Development

Supply & Equipment Management Conference December 5, 1989

NASA
SUPPLY
MANAGEMENT
SYSTEM

(11/17/89)

NASA SUPPLY MANAGE...ENT SYSTEM (NSMS)



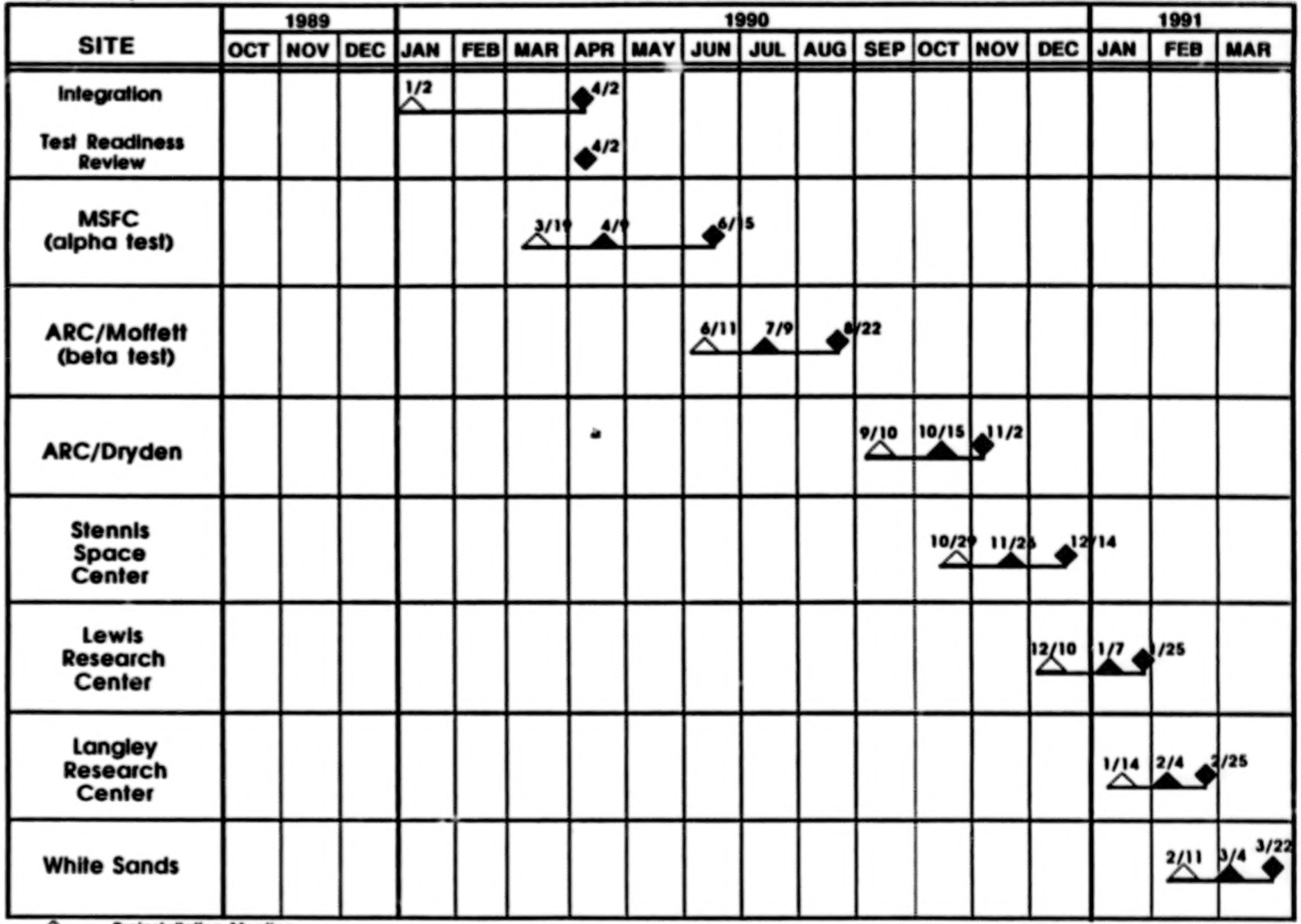
[Revised 6/21/89 -- Based Upon Change Control Requests (CCR)
Resulting From the Detail Design Review (CDR).]

NASA SUPPLY MANAGEMENT SYSTEM

(bch-4/88-005.2.a)

(11/17/89)

NSMS INSTALLATION SCHEDULE -- DRAFT



△ - Preinstallation Meeting
▲ - Installation and Training
◆ - Completion

NASA SUPPLY MANAGEMENT SYSTEM

SIP-03/89-01

NSMS General Status Workshop

NASA
SUPPLY
MANAGEMENT
SYSTEM

- Jeff Sutton / NIE -- NSMS Functional Sponsor
- Pat Sporn / NTI -- NSMS Program Technical Manager
- James A. Forney / MSFC -- NSMS Development Installation Project Manager
- Bonnie Hankins / BCSS -- NSMS Project Manager

22nd NASA Annual Supply and
Equipment Management Conference

SUPPORT REQUIREMENTS FOR THE NASA MARS INITIATIVE

A. M. Koller, Jr. DBA

22nd NASA Annual Supply and Equipment Management Conference

AGENDA

1. MARS -- The Objective and Its Environment
2. Some Exploration Requirements For Man
3. Implications for Support Systems
4. Special Concerns and Opportunities

MARS -- The "Red" Planet

Some Interesting Characteristics:

- Fourth Planet from the Sun - second closest to Earth (Venus is closer) at 35 M miles
- Smaller than Earth (4200 m diameter)
- Slower in rotation (24h:37m day) and much longer year (687 earth-days)
- Temperatures: -191F to -24F
- Atmosphere: CO/CO2, N, Ar, O, Ne, Kr, Xe
- Moons: Phobos/5800 mi, Deimos/14,600 mi

MARS -- Characteristics (cont)

- o Three types of clouds
  - Pink, probably from dust
  - Blue, probably from ice
  - White, probably from water vapor
- o Gravity lower than on Earth - 3/8 g (100 pounds on Earth = 38 on Mars)
- o Six American and one Soviet spacecraft have visited Mars since 1965
- o Whether life exists or has ever existed on Mars remains unanswered

"DE MOTIBUS STELLAE MARTIS"

THE PLANET MARS

	MILES	KILOMETERS
Distance from sun		
Mean (1.5237 A.U.*)	141,500,000	228,000,000
Aphelion (1.6658 A.U.)	154,100,000	248,000,000
Perihelion (1.3826 A.U.)	128,000,000	206,000,000
Distance from earth		
Perihelion opposition	34,797,000	56,000,000
Aphelion opposition	61,516,000	99,000,000
Aphelion conjunction	248,000,000	399,100,000
Orbital velocity per second		
Mean	14.98	24.11
At aphelion	13.64	21.95
At perihelion	16.45	26.37
Escape (parabolic) velocity, per second	3.13	5.04
Circular velocity at surface, per second	2.21	3.56
Equatorial diameter	4220	6780

Length of day	
Sidereal	24 hours, 37 minutes, 22.668 seconds
Solar	24 hours, 39 minutes, 35.247 seconds
Length of year (668.599 Mars days)	686.979 earth days
Eccentricity of orbit	0.09336
Mean sidereal motion in 24 hours	1886.519 seconds of arc
Inclination of orbit to ecliptic	1° 50′ 59.8″
Inclination of Martian equator to its orbit	25° 10′
Heliocentric longitude of node (1956)	49° 13′ 05.5″
Heliocentric longitude of perihelion (1956)	335° 14′ 56.6″
Mass (earth = 1)	0.108
Volume (earth = 1)	0.151
Density (earth = 1)	0.710
Density (water = 1)	3.910
Surface area (earth = 1)	0.278
Gravity at surface (earth = 1)	0.38

---

* A.U. stands for "astronomical unit," the distance of the earth from the sun.

Exploration Requirements

- o Travel to Mars via one of two routes:
  - "Sprint" -- requiring a high energy trajectory (~ 230 days)
  - Minimum energy "Conjunction" trajectory which uses planetary gravity (~ 500 days)
- o Heavy fuel consumption for "Sprint" requires "fly ahead" cargo vehicle and refueling
- o Decisions on where to land, how many landin whether to travel on the surface, and what t mission science requirements demand all will help determine the support requirements

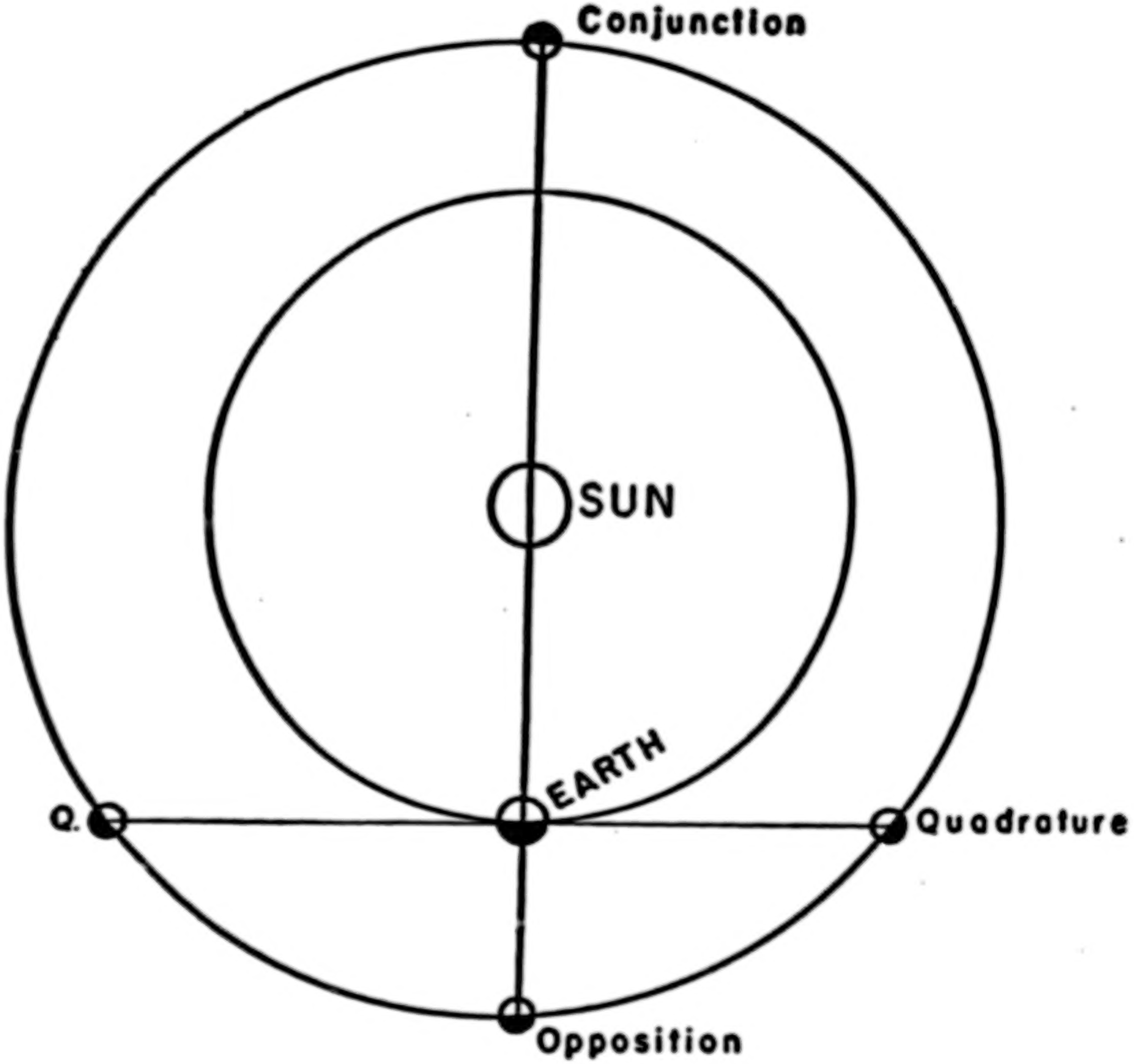
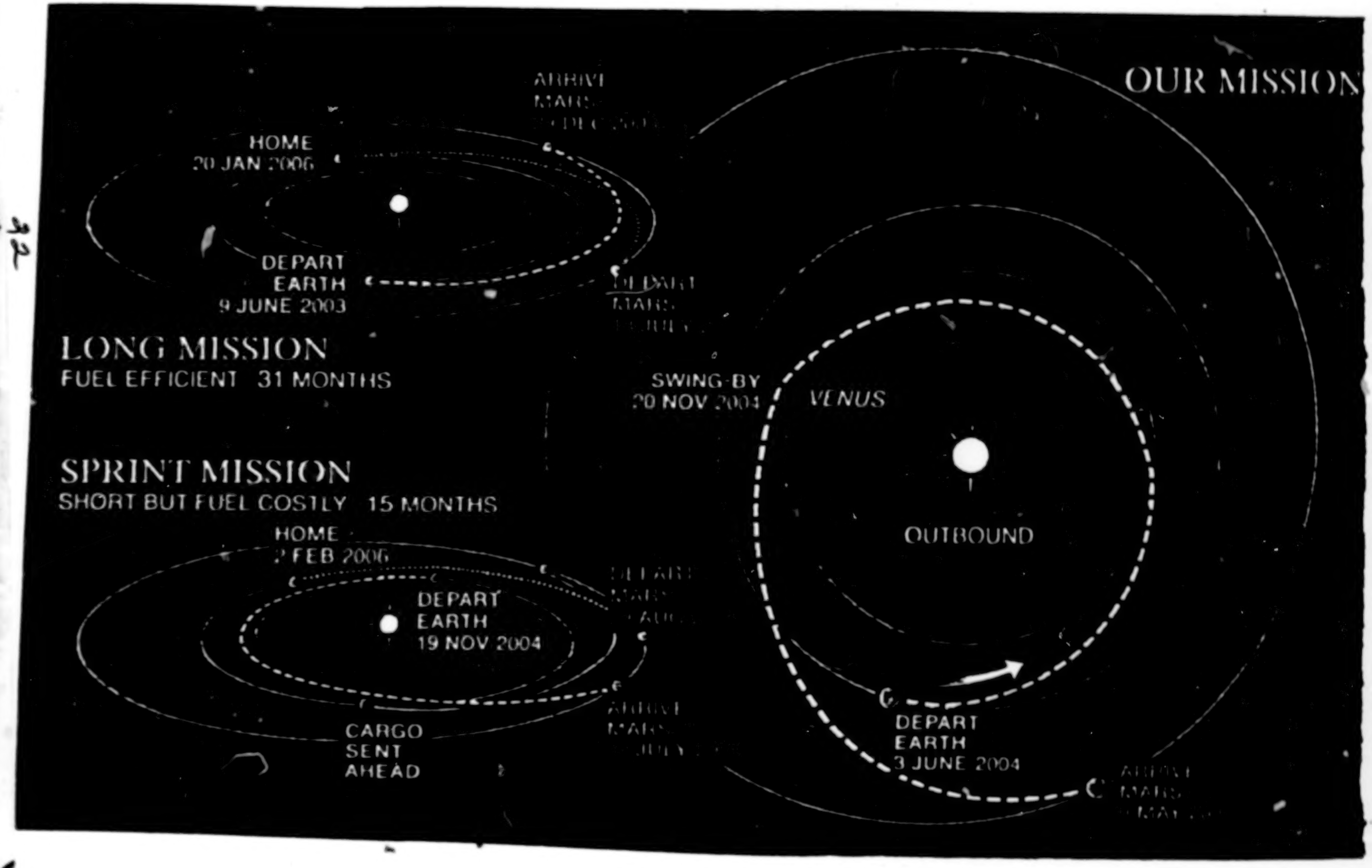

Conjunction
SUN
EARTH
Q.
Quadrature
Opposition

FIG. 1. The four principal positions that Mars can assume relative to earth. At conjunction it becomes invisible in the rays of the sun. The main period for observations is about from quadrature to quadrature.



OUR MISSION

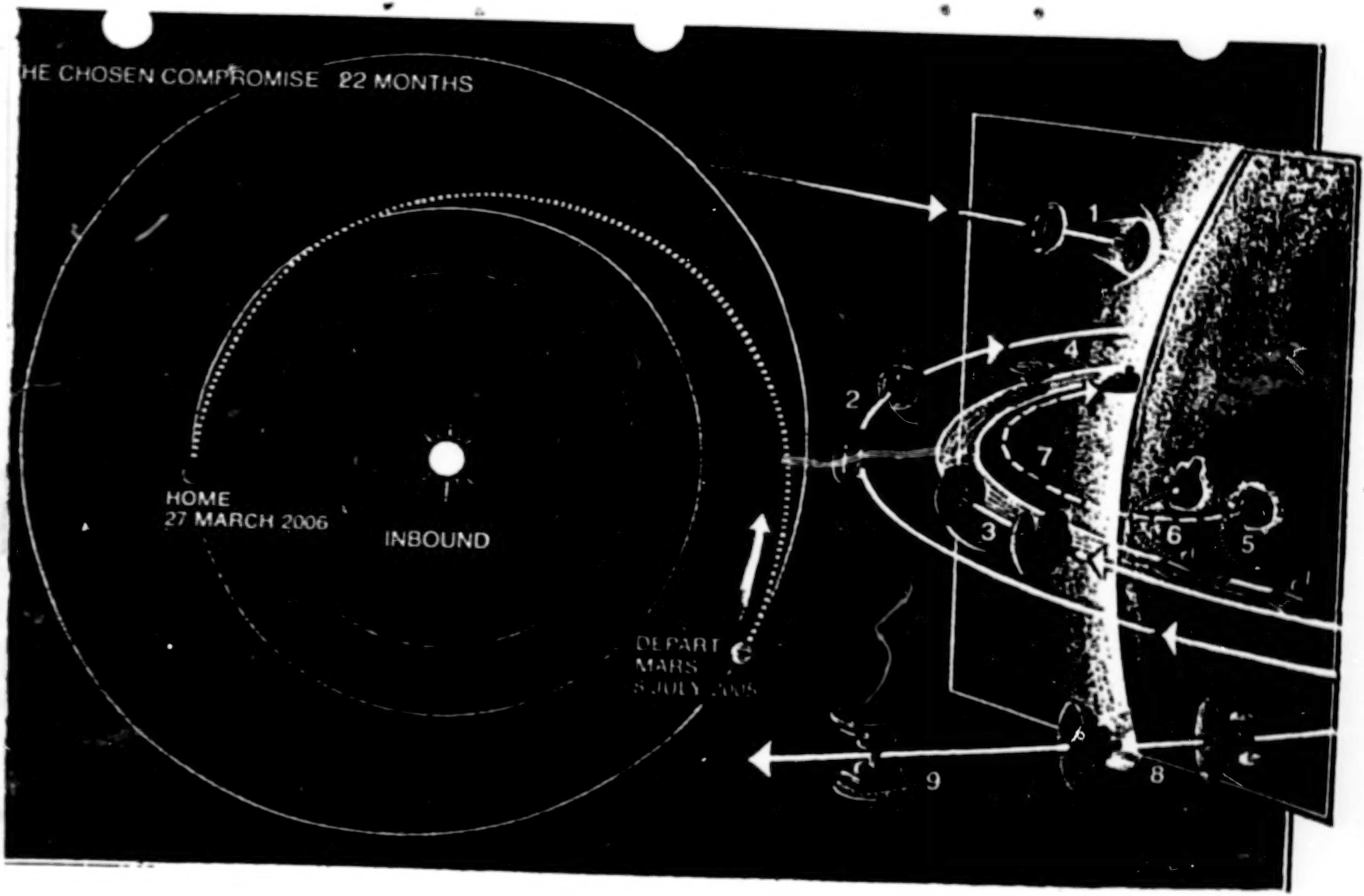
LONG MISSION

FUEL EFFICIENT 31 MONTHS

SPRINT MISSION

SHORT BUT FUEL COSTLY 15 MONTHS

HOME
20 JAN 2006
ARRIVE
MARS
DEC
DEPART
EARTH
9 JUNE 2003
DEPART
MARS
JULY
HOME
2 FEB 2006
DEPART
EARTH
19 NOV 2004
DEPART
MARS
AUG
ARRIVE
MARS
JULY
CARGO
SENT
AHEAD
SWING-BY
20 NOV 2004
VENUS
OUTBOUND
DEPART
EARTH
3 JUNE 2004
ARRIVE
MARS
MAY

HE CHOSEN COMPROMISE 22 MONTHS
HOME
27 MARCH 2006
INBOUND
DEPART
MARS
5 JULY 2005
1
2
3
4
5
6
7
8
9

MARS Exploration Requirements

✓ Ability to Take Everything Needed For The Trip:
(minimum 15 months, maximum 2-1/2 years ▪
3 pounds food, 5 pounds water, 2 pounds air
▪ 75,000 pounds for 8 man crew, 2-1/2 years)

✓ Ability to Perform a Variety of Daily Tasks:
- Prepare Meals and Maintain Menus
- Perform Medical/Surgical Procedures
- Move Around on the Surface
- Gather, Store and Analyze Data
- Clean Equipment, Clothing and Bodies
- Monitor Health and Well-being
- Participate in Recreational Activities

MARS Exploration Requirements
(Continued)

✓ Ability to Take Autonomous Actions
- Seek Safe Haven in Emergencies
- Perform Repairs/Replacement of Parts
- Provide Rescue of Downed Crewman
- Communicate with Crew and Earth
- Monitor Consumables and Perishables
- Reference Databases and Technical Information
- Evaluate System Status at all Times

✓ Ability to Resolve Conflicts and Reach Decisions
- Selection and Training -- including Refreshers
- Chain of Command, Leader/Follower Roles
- Crew Relationships and Dynamics Over Time
- Alternative Actions and Strategies

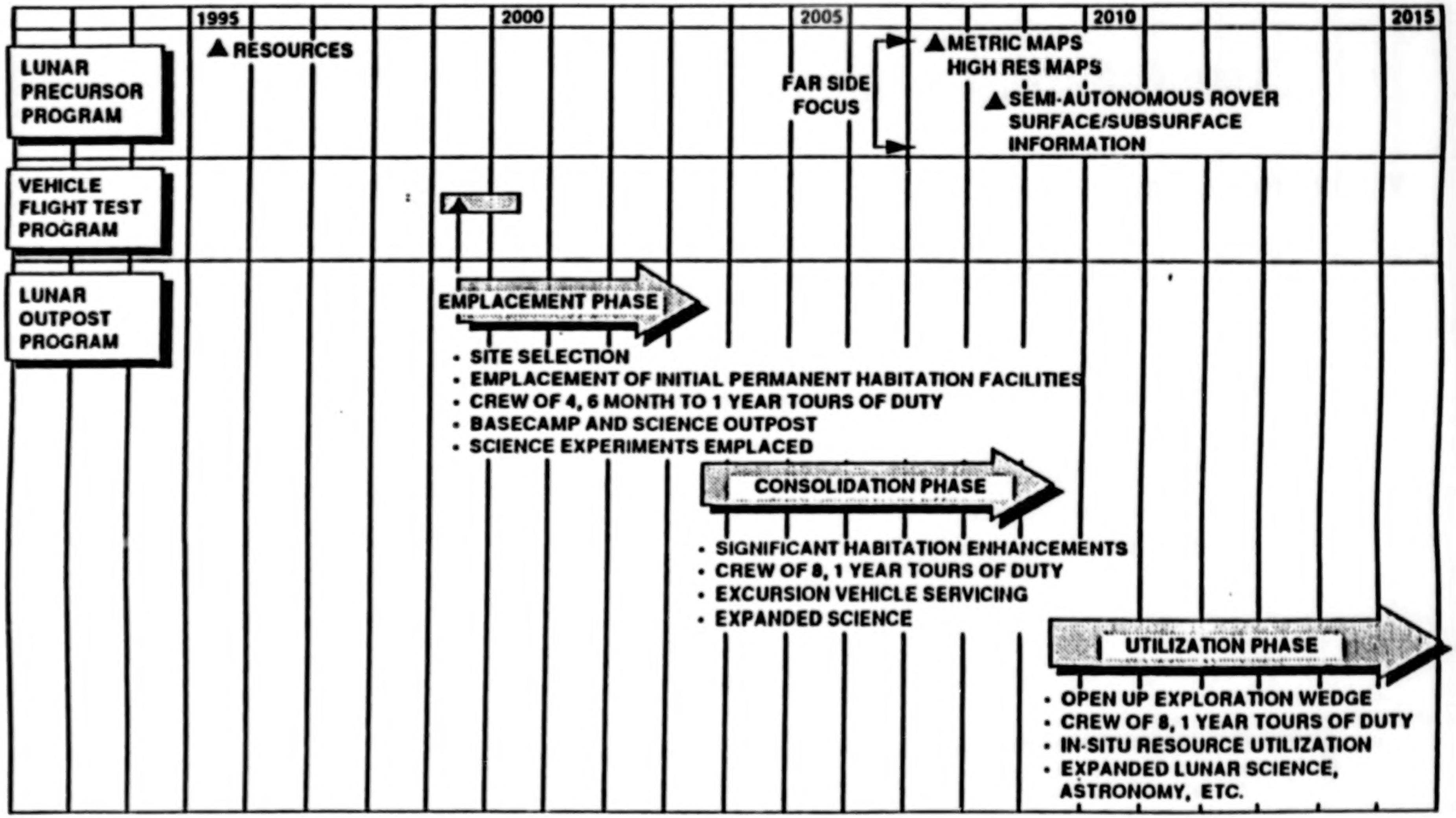
LUNAR OUTPOST SCIENCE STRATEGY

- **EMPLACEMENT PHASE**
  - CONDUCT LOCAL GEOLOGIC EXPLORATION OF OUTPOST SITE
  - ESTABLISH AUTOMATED OBSERVATORIES WITH A WIDE RANGE OF SPECIFIC SCIENCE OBJECTIVES
  - CONDUCT PILOT TESTS IN "OPERATIONAL SCIENCE" PROGRAMS
  - DEVELOP OPERATIONAL EXPERIENCE IN ALL AREAS OF SCIENCE
- **CONSOLIDATION PHASE**
  - EXPAND GEOLOGICAL EXPLORATION TO REGIONAL SCALE
  - EXPAND OBSERVATORIES IN BREADTH AND SCALE
  - CONDUCT UNIQUE EXPERIMENTS
- **UTILIZATION PHASE**
  - EXPAND GEOLOGICAL EXPLORATION TO GLOBAL SCALE
  - CONSTRUCT "GRAND" OBSERVATORIES
  - CONDUCT COMPLEX EXPERIMENTS IN THE PHYSICAL SCIENCES

JSC-Barrios 1/Science on Manned Mars Missions/N. A. Budden 8/24/89
Ver 1/8 24-89.

EXPLORATION MISSION DE .LOPMENT

LUNAR OUTPOST PHASES



EMPLACEMENT PHASE

- SITE SELECTION
- EMPLACEMENT OF INITIAL PERMANENT HABITATION FACILITIES
- CREW OF 4, 6 MONTH TO 1 YEAR TOURS OF DUTY
- BASECAMP AND SCIENCE OUTPOST
- SCIENCE EXPERIMENTS EMPLACED

CONSOLIDATION PHASE

- SIGNIFICANT HABITATION ENHANCEMENTS
- CREW OF 8, 1 YEAR TOURS OF DUTY
- EXCURSION VEHICLE SERVICING
- EXPANDED SCIENCE

UTILIZATION PHASE

- OPEN UP EXPLORATION WEDGE
- CREW OF 8, 1 YEAR TOURS OF DUTY
- IN-SITU RESOURCE UTILIZATION
- EXPANDED LUNAR SCIENCE, ASTRONOMY, ETC.

MASE

MARS EMPLACEMENT SCIENCE STRATEGY

1. SELECT A SITE CONSISTENT WITH SCIENCE OBJECTIVES OF STUDYING:
   PLANETARY EVOLUTION AND LIFE AND
   HUMAN HABITABILITY OF MARS
   I.E. A SITE THAT PERMITS IMMEDIATE (EMPLACEMENT PHASE) AND
   EXTENSIVE LOCAL SCIENCE EXPLORATION AND SAMPLING
   FOR PAST LIFE, PALEOENVIROMENTS, MINERALOGY/RESOURCES.

2. CONDUCT MANNED EXPLORATION AND SAMPLING NEAR MARS OUTPOST
   - GEOLOGY/GEOPHYSICS/METEOROLOGY
   - SEARCH FOR LIFE
   - SEARCH FOR WATER ENVIRONMENTS, PAST AND PRESENT

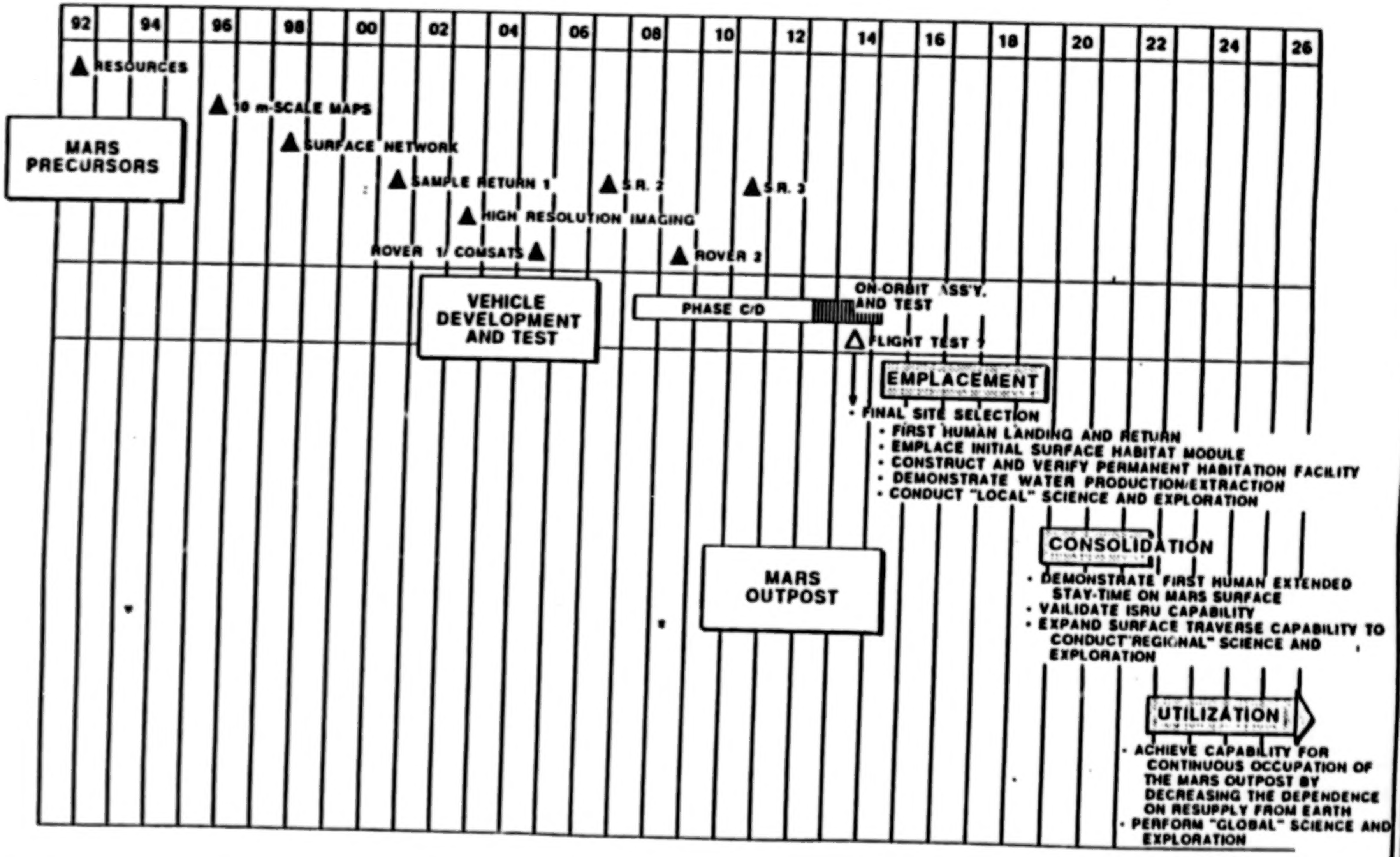
3. AT REMOTE SITES, CONDUCT TELEROBOTIC SAMPLE TRAVERSES AND DEPLOY A GEOPHYSICAL/METEOROLOGY STATION NETWORK

4. CONDUCT OBSERVATIONS TO VALIDATE AND/OR CALIBRATE REMOTELY SENSED PRECURSOR MEASUREMENTS

5. CONDUCT BASIC SAMPLE ANALYSES FOR CHARACTERIZATION BEFORE RETURN TO EARTH

EXPLORATION MISSION DEVELOPMENT

MARS OUTPOST PHASES



EMPLACEMENT

- FINAL SITE SELECTION
- FIRST HUMAN LANDING AND RETURN
- EMPLACE INITIAL SURFACE HABITAT MODULE
- CONSTRUCT AND VERIFY PERMANENT HABITATION FACILITY
- DEMONSTRATE WATER PRODUCTION/EXTRACTION
- CONDUCT "LOCAL" SCIENCE AND EXPLORATION

CONSOLIDATION

- DEMONSTRATE FIRST HUMAN EXTENDED STAY-TIME ON MARS SURFACE
- VAILIDATE ISRU CAPABILITY
- EXPAND SURFACE TRAVERSE CAPABILITY TO CONDUCT "REGIONAL" SCIENCE AND EXPLORATION

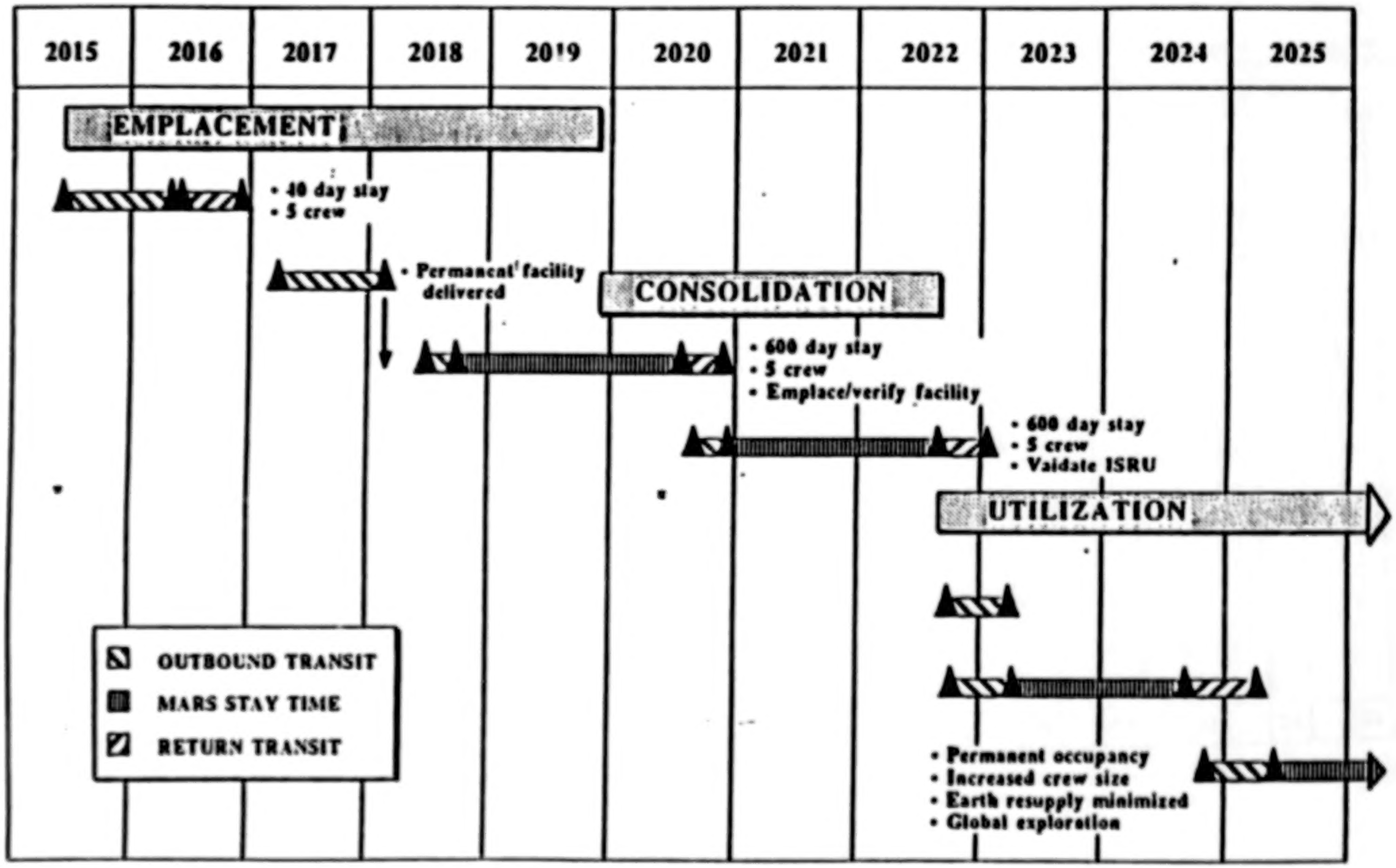
UTILIZATION

- ACHIEVE CAPABILITY FOR CONTINUOUS OCCUPATION OF THE MARS OUTPOST BY DECREASING THE DEPENDENCE ON RESUPPLY FROM EARTH
- PERFORM "GLOBAL" SCIENCE AND EXPLORATION

9/7/89

EXPLORATION MISSION DEVELOPMENT

MARS OUTPOST --- HUMAN EXPLORATION TIMELINE



Implications for Support Systems

- ✓ Reliability and Simplicity Paramount
- ✓ Standardization to Minimize Parts/Systems
- ✓ Capacity and "Buffers" Sized for Problems
- ✓ Recovery/Workaround Capability and "Fail-Safe"
- ✓ Ability to Withstand Wide Environmental Variation
- ✓ Minimum Dependence on Earth-based Systems
- ✓ Maximized Crew Capability -- All Disciplines
- ✓ Minimum Waste/Maximum Recycle of All Resources

Special Concerns and Opportunities

- ✓ Emphasis Shifts From Propulsion to Habitation
- ✓ Self-Support Overrides Scientific Endeavors
- ✓ Time Dimension Becomes More Important
- ✓ Crew Relationships Are Vital Success Requirement
- ✓ Logistics Takes on New Importance
  - Packaging and Labelling Become Critical
  - Sizing of Units for Consumption Important
  - Storage/Location Techniques Drive Designs
  - Preservation Technology to Determine Reserves
  - Monitoring Systems for Resource Status Crucial
- ✓ Recycling/Information are the Keys to Success

Special Concerns and Opportunities
(Continued)

- ✓ Maintaining Training and Ability to Respond Essential
- ✓ Long Trip Times Present Challenges for Morale
- ✓ Return to Earth Poses Unique Requirements
  - Physiologic Capabilities
  - Psychological Status and Performance
  - Latent "Threats" to Crew and Spacecraft
  - Latent "Threats" to Earth
  - Maximum Recovery of Data and Samples
- ✓ Measures of Success Subject to Reevaluation
- ✓ Final Outcome Dependent on Many Variables -- But the Most Visible, and Perhaps Most Important is the Support System

EQUIPMENT POOLING
NASA LEWIS RESEARCH CENTER
CLEVELAND, OHIO

JAMES M. VRTIS

CHIEF
EQUIPMENT MANAGEMENT BRANCH

LOGISTICS MANAGEMENT DIVISION

INTRODUCTION

RESPONSIBLE FOR:

Maintenance
Operation
Modernization of LeRC Instrument Pool

POOL CONSISTS OF:

50,000 Pieces of Capitalized Equip. (value $224M)
40,000 Pieces of Non-Capitalized Equip. (value $39M)

90% ON LOAN AND IN USE

ORIGINAL PAGE IS
OF POOR QUALITY

HISTORY

PRIOR TO APOLLO

- Limited Instrumentation Available
- Special Stuff Built in House

POOL CONCEPT DEVELOPED IN '60s

- Committee Formed
- Instrument Families Determined
- Specifications Written

FUNDS PLENTIFUL

AFTER APOLLO

- Funding and Manpower Cuts

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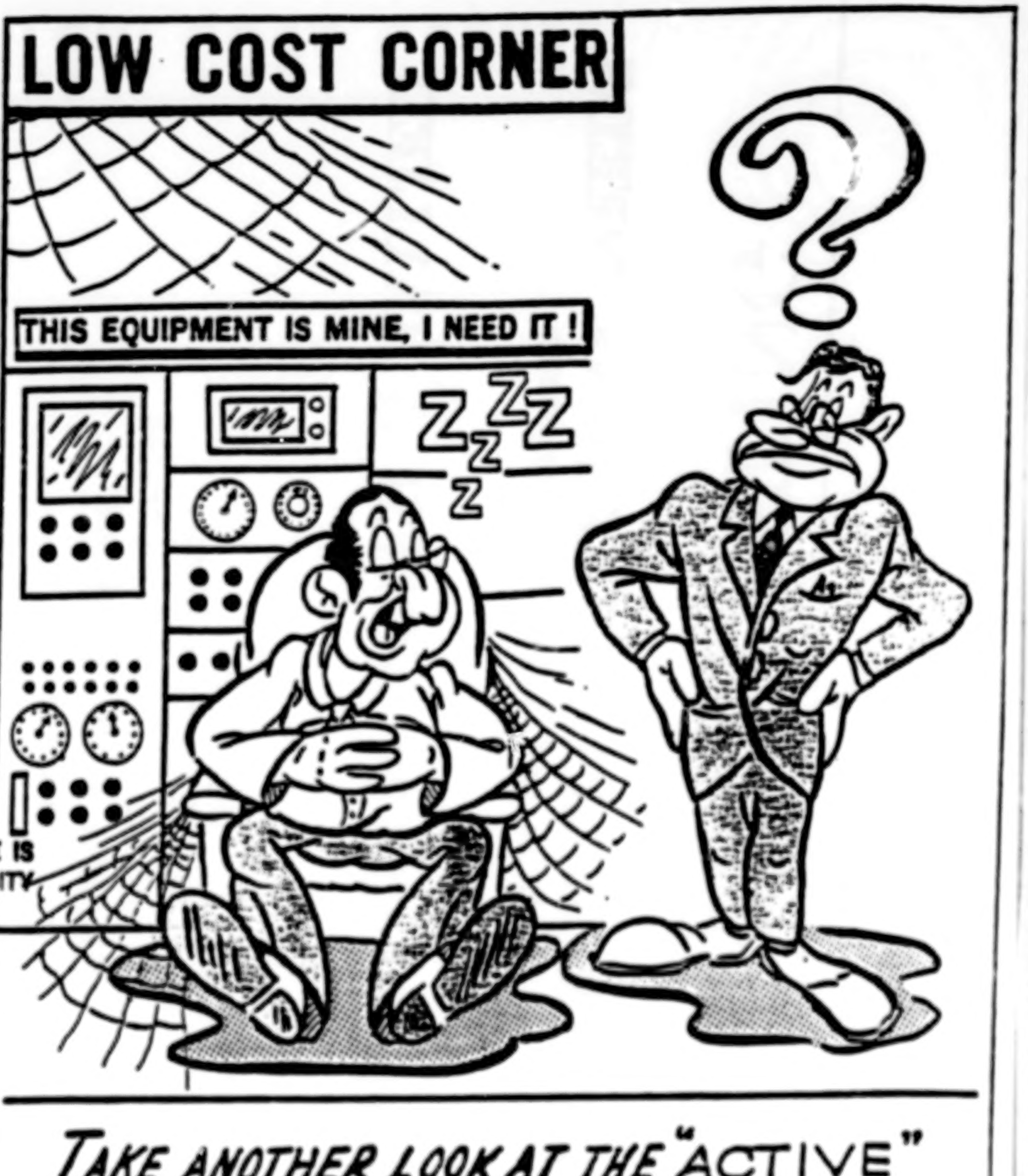
LOW COST CORNER
THIS EQUIPMENT IS MINE, I NEED IT !
ZZZZZ

TAKE ANOTHER LOOK AT THE "ACTIVE" EQUIPMENT YOU'RE HOLDING. SOMEONE ELSE MAY REALLY NEED IT!

ORIGINAL PAGE IS
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FORECASTING

RESEARCHERS DETERMINE NEEDS
Quantities and Types of Instruments

INFORMATION NOTED & TALLIED

BUYS ARE MADE
Quantity Buys Save Money
Maintenance Less Complicated
Histories Easily Developed
Dogs Eliminated

FY 91 INSTRUMENT FORCAST

PLEASE FURNISH THE INFORMATION ON THE FOLLOWING PAGES FOR YOUR FORECAST NEEDS - SOME EXAMPLES:

U-SPEC	ITEM-RANGE/MODEL	AMOUNT	BLDG	ROOM	USER	TASK	AMOUNT	BLDG	ROOM	USER	TASK
	PRESSURE TRANSDUCER										
U-3	15 PSIA	1	5	CE 4	SMITH	XOA1234	3	5	CW 4	JONES	XOB3421
	25 PSIA										
	50 PSIA										
	100 PSIA										
	200 PSIA										
	300 PSIA										
	500 PSIA										
	1000 PSIA										
	2000 PSIA										

IF FOR MORE THAN ONE USER, USE DUPLICATE COPIES, OR IF YOU HAVE A QUESTION, PLEASE CALL ME AT PBX 3-3093.

Andrew B. McLachlan
TR, Instrument Pool

POOLING

SUCCESSFUL

Users Get What They Need

USERS KNOW WHAT THEY GET

Compliance To Purchased Specifications (Tested)

LOANS ARE INDEFINITE

Rental Costs Determine Length of Loan

GOALS:

Modernize Where Possible
Keep Equipment Available for Emergencies
Replacement NOW if Possible

POLICY

ESTABLISH GUIDELINES ON WHAT INSTRUMENTS TO POOL

Basic Instruments Rather than Mainframe or Multichannel

STANDARDIZE SPECIFICATIONS

Realistic Accuracies & Precision

UTILIZE RESOURCES ON HAND

Don't Throw it out Because it is Old

MEET NEEDS OF RESEARCH

FUNDING

EQUITABLE SYSTEM REQUIRED

CIRCULATE IDLE EQUIPMENT
Lessen Acquisition Costs

ELIMINATE SENSE OF OWNERSHIP
Rental Costs Determine Length of Loan

RENTAL SYSTEM: 2.8% / mo. 1st YEAR
RESULTS: Acquisition Costs Reduced 50% First Year
Obselete Idle Equipment Turned in For Excess
Funds Available for Modernization
Small Programs Assessed Only for Equipment Used

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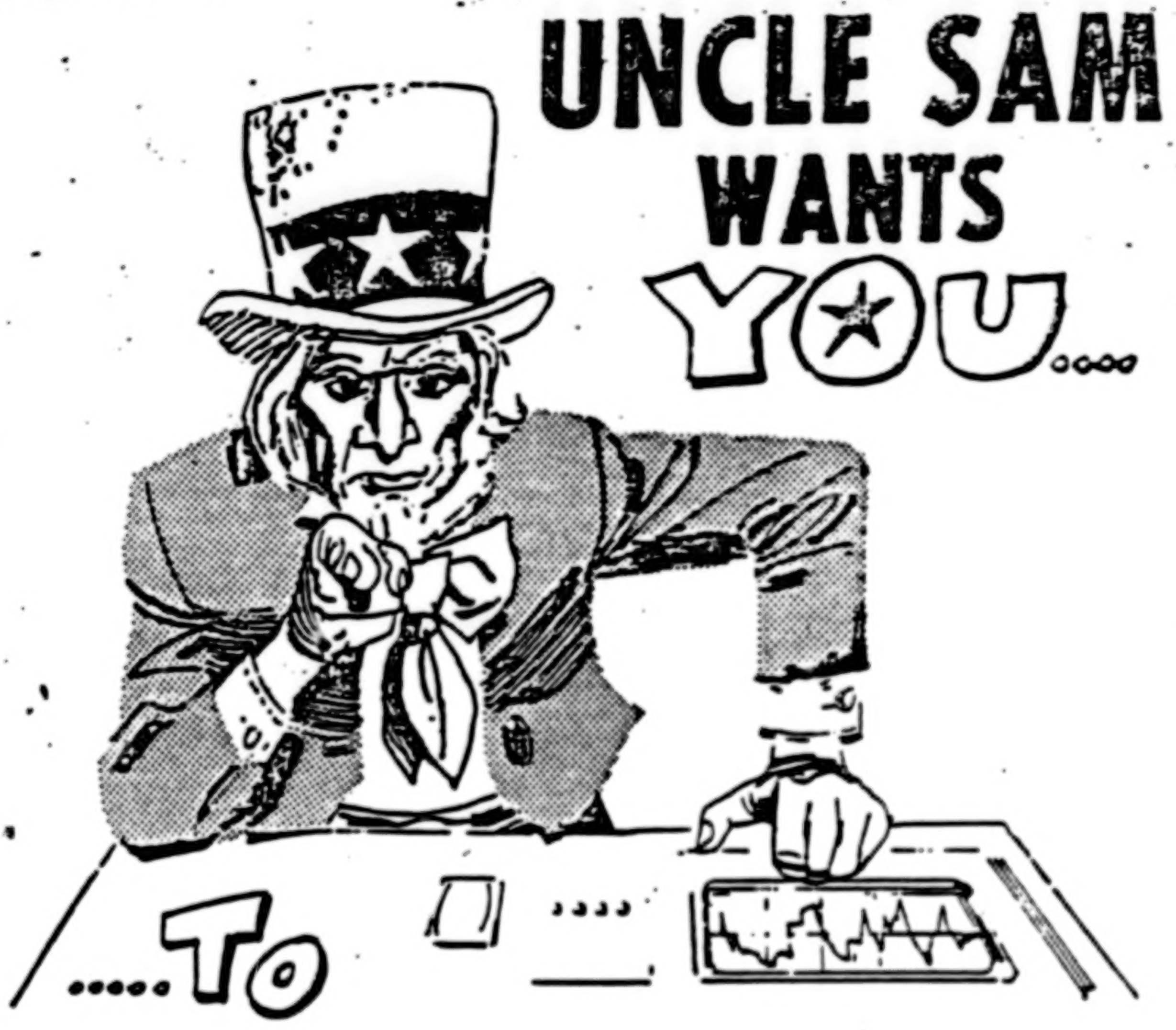

- ★ Make do with equipment you have — when you can.
- ★ Screen, use inactive equipment available at your center and at other centers.
- ★ Make your inactive equipment available to others.

SEE YOUR EQUIPMENT ACCOUNTABILITY SPECIALIST

433-3086

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NASA LEWIS RESEARCH CENTER
CLEVELAND, OHIO

JAMES M. VRTIS
EQUIPMENT AND MANAGEMENT BRANCH
LOGISTICS MANAGEMENT DIVISION

22ND ANNUAL NASA SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE
J. F. KENNEDY SPACE CENTER
COCOA BEACH, FLORIDA
DECEMBER 5-7, 1989

INTRODUCTION

GOOD MORNING. MY NAME IS JIM VRTIS, CHIEF OF THE EQUIPMENT MANAGEMENT BRANCH OF THE LOGISTICS MANAGEMENT DIVISION, AT NASA LEWIS RESEARCH CENTER. THE EQUIPMENT MANAGEMENT BRANCH IS RESPONSIBLE FOR MAINTENANCE, OPERATION, AND MODERNIZATION OF THE LEWIS INSTRUMENT POOL. THE ACTIVE POOL CONSISTS OF APPROXIMATELY 50,000 PIECES OF CAPITALIZED AND A LIKE NUMBER OF NON-CAPITALIZED EQUIPMENT. 90% OF THIS EQUIPMENT IS ELECTRONIC, ELECTRO-MECHANICAL, AND VIDEO EQUIPMENT WHICH IS ON LOAN AND IN USE AT RESEARCH FACILITIES THROUGHOUT THE CENTER. ABOUT 6,000 INSTRUMENTS OF ALL TYPES ARE IN THE POOL AT ANY GIVEN TIME AND ARE AVAILABLE FOR ISSUE AS REPLACEMENT FOR INOPERATIVE INSTRUMENTATION OR TO EQUIP A NEW TEST.

HISTORY

PRIOR TO APOLLO, MEASUREMENT OF UNUSUAL PARAMETERS WAS ACCOMPLISHED IN HOUSE BY THE DESIGN AND BUILDUP OF ANY INSTRUMENT NEEDED TO MAKE THE MEASUREMENT.

THE POOL CONCEPT WAS DEVELOPED IN THE EARLY SIXTIES WHEN INSTRUMENT MANUFACTURERS BEGAN DEVELOPMENT OF VARIETIES OF ELECTRONIC AND OTHER MEASUREMENT EQUIPMENT. A COMMITTEE WAS FORMED TO WRITE THE SPECIFICATIONS WHICH ARE REFERRED TO AS U-SPECS, FOR THOSE FAMILIES OF INSTRUMENTS REQUIRED TO SUPPORT THE CENTER'S RESEARCH PROGRAMS IN PROPULSION SYSTEMS. INITIALLY FUNDS WERE PLENTIFUL WITH COSTING PROVIDED EQUALLY BY THE RESEARCH DIVISIONS. THE INSTRUMENT OR EQUIPMENT POOL BEGAN. HOARDING

ALSO BEGAN BECAUSE EQUIPMENT WAS AVAILABLE AT NO ADDITIONAL COST AND THOUGHT TO BE PERSONAL PROPERTY WHICH CREATED INEFFICIENCIES.

FORECASTING

A METHOD WAS NECESSARY TO DETERMINE WHICH INSTRUMENTS WERE REQUIRED FOR PROGRAMS, AND WHETHER THEY FIT THE CRITERIA FOR POOLING BASED ON SPECIFICATIONS PREVIOUSLY WRITTEN. THE METHOD DEVISED WAS "FORECASTING". FORECASTING IS AN ANNUAL EVENT THAT INVOLVES RESEARCHERS WHO ARE RUNNING THE EXPERIMENT OR TEST AND THE OPERATIONS PEOPLE WHO PROVIDE THE FACILITY WHERE THE TEST WILL TAKE PLACE. WORKING TOGETHER, THEY DETERMINE QUANTITIES AND TYPES OF INSTRUMENTS NEEDED FOR THE UPCOMING YEAR'S PROGRAMS. THIS INFORMATION IS NOTED ON A STANDARD FORM GENERATED BY THE EQUIPMENT MANAGEMENT BRANCH, WHICH LISTS BY TYPE AND RANGE ALL POOLED INSTRUMENTS IN THE METROLOGY FAMILIES. THERE ARE OVER 120 DIFFERENT INSTRUMENT TYPES WHICH INCLUDE PRESSURE, TEMPERATURE, VIBRATION, FLOW, STRESS, LOAD, MASS, TORQUE, AND ANYTHING ELSE THAT PROVIDES FOR MEASUREMENT OR STIMULUS.

RESPONSE FROM RESEARCHERS IS TALLIED AND TOTALLED, AND BASED ON QUANTITIES ALREADY IN THE POOL AND WHAT SPARES ARE REQUIRED, A QUANTITY BUY IS MADE. THERE ARE SEVERAL ADVANTAGES TO BUYING IN QUANTITY AND THEY ARE:

1. QUANTITY DISCOUNTS MAKE FOR DOLLAR SAVINGS.
2. TROUBLE SHOOTING AND REPAIR ARE LESS COMPLICATED.
3. HISTORIES ARE MORE EASILY DEVELOPED SO FUTURE BUYS CAN ELIMINATE THOSE INSTRUMENTS WHICH PROVE UNRELIABLE.

POOLING

THE POOL OPERATION AT LEWIS HAS BEEN SUCCESSFUL FOR SEVERAL REASONS, WITH THE BIGGEST BEING COOPERATION BETWEEN THE USER IN MAKING REQUIREMENTS KNOWN, AND EQUIPMENT MANAGEMENT WHO MAKE THE BUYS. ALL INSTRUMENTS PURCHASED THROUGH FORECAST ARE INSPECTED 100% FOR COMPLIANCE TO SPECIFICATIONS WRITTEN WITHIN THE PURCHASE AGREEMENT. IF AN INSTRUMENT IS REPAIRED AT ANY TIME DURING ITS LIFE, IT MUST BE CALIBRATED TO ASSURE THAT IT STILL MEETS THOSE SPECS. IN THIS WAY, THE USER HAS CONFIDENCE THAT THE EQUIPMENT HE DRAWS WILL PERFORM AS EXPECTED. POSSIBLE POOL CANDIDATES ARE PUT THROUGH AN EVALUATION TO DETERMINE MAINTAINABILITY, LIFE EXPECTANCY, MANUFACTURERS PAST PERFORMANCE FOR RELIABILITY AND OTHER FACTORS.

ALL LOANS ARE FOR AN INDEFINITE PERIOD, USUALLY FOR THE LENGTH OF THE PROGRAM OR UNTIL A MALFUNCTION OCCURS. THERE ARE NO FORMAL SHORT TERM LOANS. THE RENTAL COSTS DETERMINE THE LENGTH OF A POOL LOAN, ESPECIALLY IF THE INSTRUMENT WAS AN UNNEEDED LUXURY.

NOTEWORTHY; WHEN WE LOOK AT THE AVERAGE AGE OF INSTRUMENTATION AND SEE HIGH NUMBERS, DON'T BE MISLED. AT LEWIS, ABOUT 30% OF OUR MEASUREMENTS REQUIRE SIGNAL CONDITIONING, AMPLIFICATION, AND VOLTAGE SOURCES. INSTRUMENTS USED FOR THIS PURPOSE HAVE LONG LIFE SPANS AND SOME MAY BE PERFECTLY SUITABLE AFTER SEVERAL YEARS. A POOL CAN BE UPDATED AND MODERNIZED AS MUCH AS FUNDING WILL ALLOW, YET IT WILL LOOK ARCHAIC WHEN ONE READS A PRINTOUT OF AVERAGE INSTRUMENT AGE. IN THAT RESPECT, I'M SURE ALL CENTERS ARE SIMILAR.

WE TRY TO KEEP ENOUGH RECENTLY CALIBRATED INSTRUMENTS ON HAND TO ACCOUNT FOR ANY EMERGENCY. IF REPLACEMENT CANNOT BE IMMEDIATELY MADE, THE MALFUNCTIONED INSTRUMENT WILL BE REPAIRED ON PRIORITY DETERMINED BY IMPACT TO THE PROJECT. OUR GOAL IS TO RESPOND WITH REPLACEMENT RIGHT NOW. THIS MAY BE UTOPIAN, BUT WE HAVE BEEN FAIRLY SUCCESSFUL.

POLICY

THE PHASE DOWN AND FINAL END OF APOLLO BEGAN A TREND OF FUNDING CUTS WHICH RESULTED IN PERSONNEL REDUCTIONS AND A REALIGNMENT OF RESEARCH PROGRAMS. THE CENTER AGAIN BECAME SERVICE ORIENTED WITH REIMBURSABLE PROGRAMS BEING GENERATED. GUIDELINES WERE NECESSARY TO ESTABLISH WHICH EQUIPMENT TO CONSIDER POOLING. DECISIONS WERE MADE FOR EXAMPLE, ON WHETHER WE POOL LARGE MAINFRAME TYPE SCOPES OR MULTICHANNEL RECORDERS, OR POOL BASIC EQUIPMENT AND LET RESEARCH BUY THE COSTLIER EQUIPMENT FOR THEIR PROGRAM. EVERYONE WAS IN A BUDGET CRUNCH AND WE HAD TO BE COST EFFECTIVE AND STILL PROVIDE FOR MODERN EQUIPMENT. SPECIFICATIONS HAD TO BE STANDARDIZED WITH MORE REALISTIC ACCURACIES AND PRECISION. THE RESEARCHER WAS FORCED TO WEIGH EQUIPMENT COSTS VERSUS DELAYS IN BASIC RESEARCH PROGRAMS. EQUIPMENT MANAGEMENT HAD RESPONSIBILITY FOR MAINTENANCE OF A MODERN POOL, BUT WAS FORCED TO FOSTER UTILIZATION OF AVAILABLE RESOURCES WHICH WERE FAST BECOMING OBSOLETE. WE REVIEWED INVENTORY AND PROPOSED ACQUISITIONS TO DETERMINE BEST METHODS FOR MEETING NEEDS OF OUR RESEARCHERS THROUGH A MODERN POOL.

FUNDING

IN THE PAST, ALL RESEARCH DIVISIONS WERE ASSESSED EQUALLY FOR MAINTENANCE OF THE POOL AND THE EQUIPMENT IN IT. THE SMALL PROGRAMS COULD NOT AFFORD THE ACQUISITION OF MODERN EQUIPMENT OR SUPPORT OF A POOLING SYSTEM WITH TAXATION FOR MAINTENANCE AND CALIBRATION SERVICES. A MORE EQUITABLE FUNDING METHOD WAS NEEDED AND IDLE EQUIPMENT HAD TO BE CIRCULATED TO LESSEN ADDITIONAL PROCUREMENT. THE FEASIBILITY OF EQUIPMENT RENTAL WAS DISCUSSED WITH BUDGET, AND ADVANTAGES IDENTIFIED TO THE DIRECTORS OF RESEARCH ORGANIZATIONS. WE ESTABLISHED GUIDELINES TO DETERMINE WHICH EQUIPMENT TO CONSIDER POOLED AND WHAT PERCENTAGE OF ACQUISITION COST TO ASSESS FOR RENTAL PER MONTH.

FIRST YEAR RENTAL OF CAPITALIZED EQUIPMENT WAS 2.8% OF ACQUISITION COST PER MONTH. (THE AVERAGE HAS BEEN ABOUT 2.0%). MONIES ARE THEN USED TO BUY NEW EQUIPMENT AND INCLUDE REPAIR, CALIBRATION, AND ANY TRACEABILITY REQUIREMENTS THROUGH THE CALIBRATION LABORATORY. REPAIR AND CALIBRATION OF NON-POOLED INSTRUMENTS ARE CHARGED BACK FOR SERVICES ON A COST PLUS BASIS.

RESULTS

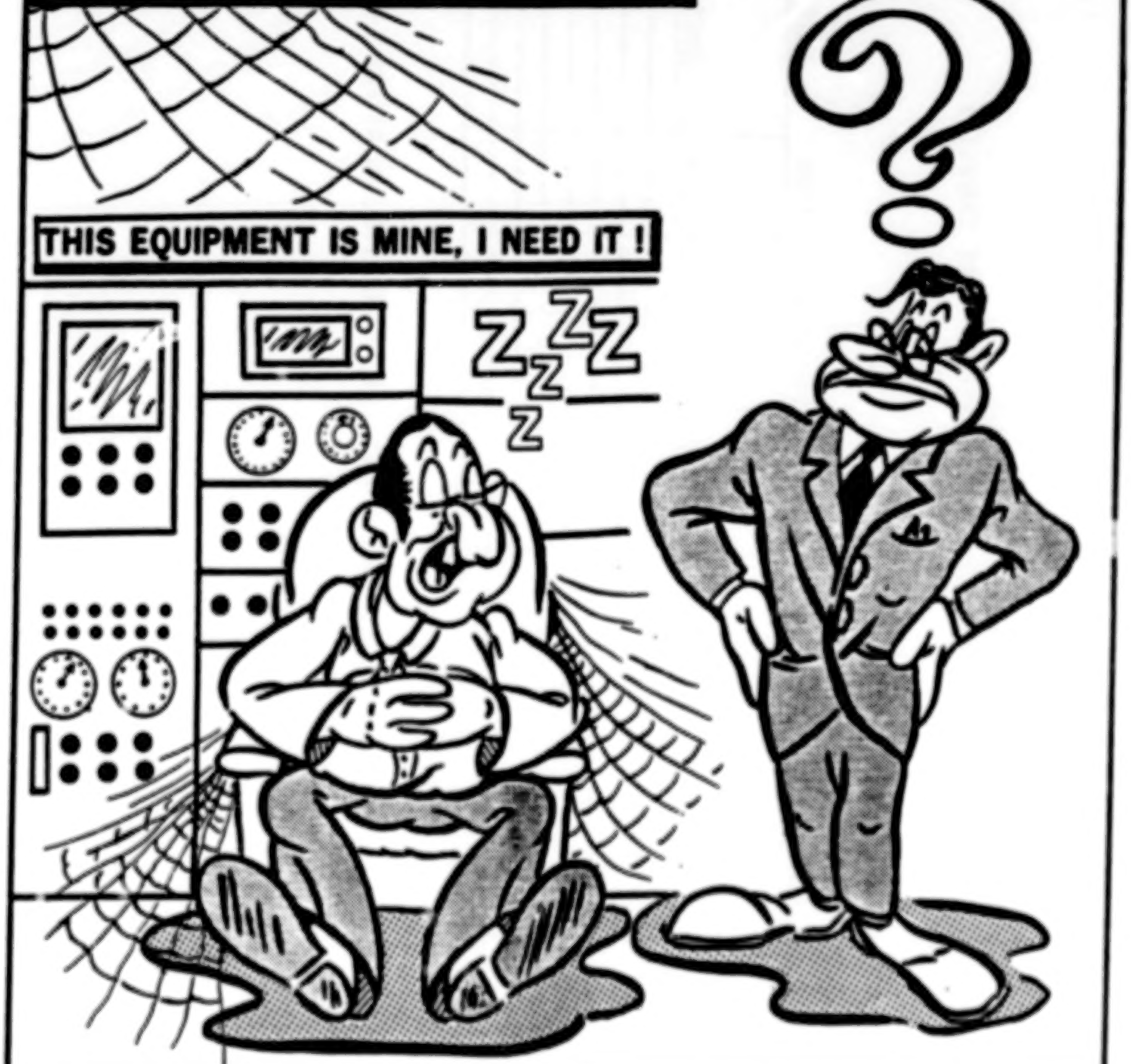
1. ACQUISITION COSTS OF POOLED EQUIPMENT AFTER THE FIRST RENTAL YEAR DROPPED OVER 50%.
2. OBSOLETE IDLE EQUIPMENT IS TURNED IN AND EXCESSED, FURTHER REDUCING PROPERTY MANAGEMENT COSTS.
3. RECIRCULATION OF EQUIPMENT IMPROVES THE HEALTH OF THE EQUIPMENT POOL.
4. FUNDS PROVIDE FOR CONTINUAL MODERNIZATION.
5. SMALL PROGRAMS ARE ASSESSED ONLY FOR EQUIPMENT USED.

CONCLUSION

OUR POOLING PROGRAM AT LEWIS IS ONGOING WITH CHANGES CONSTANTLY BEING MADE TO IMPROVE. WE TRY TO LISTEN TO OUR USERS AND PROVIDE THE RESEARCH TOOLS THAT THEY NEED. WITH HELP FROM OUR USERS WE DETERMINE TYPES AND FAMILIES OF INSTRUMENTS TO POOL AND QUANTITIES BASED ON FORECAST. USERS QUICKLY REALIZE THAT EQUIPMENT IS NOT PERSONAL PROPERTY AND SAVINGS CAN BE REALIZED BY TURNING IN UNUSED EQUIPMENT. BENEFITS OF THIS SYSTEM HAVE BEEN PROVEN ESPECIALLY TRUE WHEN EQUIPMENT NEEDS ARE MET BY AVAILABLE, UP-TO-DATE HARDWARE, AT REASONABLE COST TO THE PROGRAM.

ARE THERE ANY QUESTIONS?

LOW COST CORNER


THIS EQUIPMENT IS MINE, I NEED IT !
ZZZZZ

TAKE ANOTHER LOOK AT THE "ACTIVE" EQUIPMENT YOU'RE HOLDING. SOMEONE ELSE MAY REALLY NEED IT!

FOR FURTHER INFORMATION CALL - THE EQUIPMENT MANAGEMENT BRANCH 433-3091

FY 91 INSTRUMENT FORCAST

PLEASE FURNISH THE INFORMATION ON THE FOLLOWING PAGES FOR YOUR FORECAST NEEDS - SOME EXAMPLES:

U-SPEC	ITEM-RANGE/MODEL	AMOUNT	BLDG	ROOM	USER	TASK	AMOUNT	BLDG	ROOM	USER	TASK
	PRESSURE TRANSDUCER										
U-3	15 PSIA	1	5	CE 4	SMITH	XOA1234	3	5	CW 4	JONES	XOB3421
	25 PSIA										
	50 PSIA										
	100 PSIA										
	200 PSIA										
	300 PSIA										
	500 PSIA										
	1000 PSIA										
	2000 PSIA										

IF FOR MORE THAN ONE USER, USE DUPLICATE COPIES, OR IF YOU HAVE A QUESTION, PLEASE CALL ME AT PBX 3-3093.

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Andrew B. McLachlan
TR, Instrument Pool

UNCLE SAM WANTS YOU....

- ★ Make do with equipment you have — when you can.
- ★ Screen, use inactive equipment available at your center and at other centers.
- ★ Make your inactive equipment available to others.

SEE YOUR EQUIPMENT ACCOUNTABILITY SPECIALIST

433-3086

ENVIRONMENTAL PANEL

MASTER

SUPPLY & LOGISTICS
MANAGEMENT CONFERENCE

HAZARDOUS MATERIALS / WASTE MANAGEMENT
SAFETY ISSUES

WAYNE FRAZIER
NASA SAFETY DIVISION
WASHINGTON D.C.

DEFINITION OF HAZ MAT

NHB 1700.1 VOL 1–A "BASIC SAFETY MANUAL", 1983 DEFINES

- A SUBSTANCE OR MATERIALS IN A QUANTITY AND FORM WHICH MAY POSE AN UNREASONABLE RISK TO HEALTH AND SAFETY OR PROPERTY WHEN TRANSPORTED IN COMMERCE (49 USC 1802). THE SECRETARY OF TRANSPORTATION HAS DEVELOPED A LIST OF MATERIALS THAT ARE HAZARDOUS WHICH MAY BE FOUND IN 49 CFR 172.101.

FROM NHB 1700.1 VOL 1–A "BASIC SAFETY MANUAL"

- TYPICAL EXAMPLES OF HAZ MAT ARE THOSE THAT MAY BE HIGHLY REACTIVE, POISONOUS, EXPLOSIVE, FLAMMABLE COMBUSTIBLE, CORROSIVE, RADIOACTIVE, PRODUCE CONTAMINATION OR POLLUTION OF THE ENVIRONMENT, OR CAUSE ADVERSE HEALTH EFFECTS OR UNSAFE CONDITIONS.

- BY REFERENCE SINCE NASA HAS ADOPTED THE OSHA STANDARDS, THE NEW OSHA HAZARDOUS CHEMICAL DEFINITIONS IN 29 CFR 1910.1200 ALSO APPLY.

"HAZARDOUS CHEMICAL IS DEFINED BY LAW AS ANY CHEMICAL WHICH IS A PHYSICAL OR HEALTH HAZARD. PHYSICAL HAZARD MEANS A CHEMICAL FOR WHICH THERE IS SCIENTIFICALLY VALID EVIDENCE THAT IT IS A COMBUSTIBLE LICQUID, A COMPRESSED GAS, EXPLOSIVE, FLAMMABLE, AN ORGANIC PEROXIDE, AN OXIDIZER, PYROPHERIC, UNSTABLE (REACTIVE) OR WATER–REACTIVE. A HEALTH HAZARD MEANS A CHEMICAL FOR WHICH THERE IS STATISTICALLY SIGNIFICANT EVIDENCE BASED ON AT LEAST ONE STUDY CONDUCTED IN ACCORDANCE WITH ESTABLISHED SCIENTIFIC PRINCIPLES THAT ACUTE OR CHRONIC HEALTH EFFECTS MAY OCCUR IN EXPOSED EMPLOYEES. MORE DETAILED INFORMATION CAN BE FOUND IN 29 CFR 1910.1200 (C)."

SAFETY REQUIREMENTS APPLICABLE TO THE SUPPLY & LOGISTICS FUNCTION

1. BASIC TRAINING FOR EACH EMPLOYEE FOR SPECIFIC JOB–RELATED SAFETY AND HEALTH INFORMATION

   - FROM THE BASIC SAFETY MANUAL

     A. HAZARDS OF THE JOB

     B. SAFE WORK PRACTICES

     C. HAZARDS OF THE WORK ENVIRONMENT

     D. USE AND CARE OF PERSONNEL PROTECTIVE EQUIPMENT

     E. FIRST AID PROCEDURES

     F. REPORTING OF INJURIES, ILLNESSES, AND HAZARDOUS CONDITIONS

2. SPECIFIC TRAINING

- BASIC SAFETY MANUAL CHAPTER 6: DISTINCTION BETWEEN USERS OF HAZARDOUS MATERIALS AND HANDLERS OF HAZARDOUS MATERIALS.

HANDLERS: "THOSE INDIVIDUALS WHO DO NOT OPEN OR OTHERWISE DISTURB THE INTEGRITY OF THE BASIC, PROPERLY PACKAGED, SHIPPING CONTAINER THAT HOLDS THE HAZ MAT. AS AN EXAMPLE, THIS INCLUDES PERSONNEL WHO PREPARE, PACKAGE, MARK, OR TRANSPORT HAZ MAT. PERSONNEL WHO REDUCE PALLETIZED OR OTHERWISE COMBINED ITEMS INTO SMALLER INCREMENTS WITHOUT EXPOSING THE HAZ MAT ARE CONSIDERED HANDLERS."

CERTIFICATION REQUIREMENTS FOR HANDLERS OF HAZ MAT

- LINE MANAGEMENT OR FIELD INSTALLATION SAFETY OR HEALTH OFFICIALS WILL DETERMINE IF SPECIAL SAFETY CERTIFICATION IS REQUIRED FOR A PARTICULAR JOB.
- SPECIFIC TRAINING IN THE FEDERAL, NASA, AND LOCAL RULES FOR PREPARING, PACKAGING, MARKING, AND TRANSPORTING THE HAZARDOUS MATERIAL ASSOCIATED WITH THE JOB.
- EXAMINATION BY WRITTEN TEST TO DETERMINE THE ADEQUACY AND RETENTION OF THE TRAINING.
- ISSUANCE OF A CARD OR LICENSE (TO BE CARRIED ON PERSON) LISTING NAME, DATE, MATERIALS FOR WHICH CERTIFICATION IS VALID, SIGNATURE OF CERTIFYING OFFICIAL, AND DATE OF EXPIRATION.
- CATEGORY III RECERTIFICATION PERIOD WILL BE AS DETERMINED BY THE INSTALLATION SAFETY AND/OR HEALTH OFFICIALS IN THE ABSENCE OF ANY STATE OR FEDERAL REQUIREMENTS.

3. MANAGEMENT FUNCTIONS

A. HANDLING AND STORAGE OF MATERIALS

(1) EACH INSTALLATION WILL, AS APPROPRIATE, HAVE ADEQUATE SAFETY PROCEDURES GOVERNING HANDLING AND STORAGE OF MATERIALS WITH PARTICULAR EMPHASIS ON HAZARDOUS MATERIALS (E.G., PROPELLANTS; CRYOGENICS; GASOLINE; HIGH PRESSURE FLUIDS; FLAMMABLE MATERIALS; POISONOUS, TOXIC AND RADIOACTIVE MATERIALS; CORROSIVES; EXPLOSIVES; ACIDS; AND SIMILAR MATERIALS).

(2) PARTICULAR ATTENTION IS TO BE GIVEN TO PROPER SPACING, ADEQUATE IDENTIFICATION, COLOR CODING, ENVIRONMENTAL CONTROL, STANDARD CONTAINERS AND QUALIFICATIONS AND TRAINING OF WAREHOUSING PERSONNEL.

B. FACILITY OPERATIONS MANAGERS OR COORDINATORS

(1) THE FIELD INSTALLATION DIRECTOR OR DESIGNEE CAN APPOINT A FACILITY OPERATIONS MANAGER OR FACILITY COORDINATOR THAT HAS RESPONSIBILITY FOR OVERSEEING PROPER OPERATION OF THE FACILITY. THE DEGREE OF HAZARDS INVOLVED AND THE SCOPE OF OPERATIONS IN THE FACILITY WILL BE USED TO DETERMINE THE NEED FOR A FACILITY OPERATIONS MANAGER OR COORDINATOR. A FACILITY SAFETY COORDINATOR MAY BE APPOINTED TO ASSIST THE MANAGER.

(2) THE FACILITY OPERATIONS MANAGER OR COORDINATOR IS THE FOCAL POINT FOR SAFETY PLANNING, IMPLEMENTATION AND ENFORCEMENT. CONSIDERATION WILL BE GIVEN TO THE ELIMINATION OF HAZARDS, SAFETY ANALYSIS, PROTECTIVE EQUIPMENT AND DEVICES, AND THE PRESENCE OF EMERGENCE EQUIPMENT INCLUDING FIRST AID GEAR, EMERGENCY SHOWERS, AND LIKE ITEMS. EMERGENCY PLANS ARE TO BE IN EFFECT AND SUFFICIENTLY PRACTICED TO ASSURE ADEQUACY. PROCEDURAL ASPECTS ARE TO INCLUDE ISUANCES OF PERMITS, CONDUCT OF INSPECTIONS, AND TRAINING OF PEOPLE.

C. FIELD INSTALLATION DIRECTORS SHALL:

ENSURE THAT HAZARDOUS MATERIAL WILL BE LABELED IN ACCORDANCE WITH CURRENT LAWS OR REGULATIONS TO ALERT USERS, SHIPPERS, OCCUPATIONAL SAFETY AND HEALTH AND EMERGENCY ACTION PERSONNEL, AND OTHERS, TO BASIC INFORMATION CONCERNING FLAMMABILITY, TOXICITY, COMPATIBILITY, FIRST AID PROCEDURES, AND NORMAL AS WELL AS EMERGENCY HANDLING AND DISPOSAL PROCEDURES.

SUMMARY

1700.1 VOL 1–A IN CONJUNCTION WITH NHS/IH 1845.3
"NASA HEALTH STANDARD FOR HAZARD COMMUNICATION"
MEETS ALL EXISTING LAWS.

NEW CHANGES

- DOT PROPOSED RULEMAKING FOR INCREASED TRAINING & DOCUMENTATION FOR CLASSIFIERS, PACKAGERS, PREPARERS, OPERATORS, AND "PERSONS IN THE VACINITY OF HAZARDOUS MATERIALS DURING THE COURSE OF TRANSPORTATION E.G. WAREHOUSE WORKERS, DRIVERS."
- NASA INTERACTIVE HAZARD COMMUNICATION PROGRAM. COPIES PROVIDED BY CODE N TO EACH CENTER TRAINING OFFICE.

WHAT IS NEEDED?

- MORE OF A "STORE STOCK" CENTRAL DISTRIBUTION SYSTEM FOR HAZARDOUS CHEMICALS TO LIMIT THE REGULATORY BURDEN OF REPORTING AND DOCUMENTATION.
- BETTER CONTROL.

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APPLICABLE REGULATIONS

- Code of Federal Regulations, 29 CFR 1910.1200, "OSHA Hazard Communication Standard"
- NASA Health Standard, NHS/IH-1845.3, "NASA Health Standard on Hazard Communication"

MANUFACTURER RESPONSIBILITIES

- Determine the hazards associated with products
- Communicate the hazards to downstream users via:
  - Container labeling
  - Material Safety Data Sheets

EMPLOYER RESPONSIBILITIES

- Maintain a list of all workplace hazardous materials
- Maintain manufacturers Material Safety Data Sheets (MSDSs)
- Provide employees 'ready access' to hazardous material lists and MSDSs
- Assure proper labeling of all containers of hazardous materials
- Provide Hazard Communication training to all potentially exposed employees

EMPLOYEE RIGHTS

- Employees have right to know the hazards in his/her workplace
- Employee has right to know how to identify the hazards and methods of protection from them
- Employee has right to refuse work when hazard information is not provided (applicaple to certain state regulations only)

COMMODITIES WHICH MAY CONTAIN HAZARDOUS MATERIALS

Abrasives
Acids
Adhesives
Antifoaming Agents
Antifreeze Agents
Anti-Oxidants
Asphalts
Batteries
Bleaches
Catalysts
Caustics
Chelating Agents
Cleaning Agents
Compressed Gases
Concrete Mixes
Corrosion Inhibitors
Cryogenic Liquids
Curing Agents
Degreasing Agents
Desiccants
Dyes
Electroplating Chemicals
Emulsifying Agents
Explosives
Fertilizers
Fire Extinguishing Chemicals
Fire Retardants
Foaming Agents
Fuels
Fumigants
Fungicides
Laboratory Reagents
Lubricants
Metal Powders
Metal Salts
Metal Stock
Oils
Oxidizers
Paints
Paint Removers
Pesticides
Photocopy Chemicals
Photographic Chemicals
Petroleum Products
Pigments
Pitches
Plasters
Plasticizers
Plastic Resins
Polishes
Preservative Chemicals
Protective Coatings
Refrigerants
Rust Removers
Sanitizing Agents
Scrap Metal
Sealants
Solders
Solder Fluxes
Solvents
Sterilizing Agents
Tars
Thermal Insulation Materials

NASA

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DEFINING HAZARDOUS MATERIALS

Hazards associated with materials are classified as physical hazards or health hazards. These materials can cause injury or illness as a result of either their chemical characteristics or their toxicity.

PHYSICAL HAZARDS , such as fire or explosions, occur as a result of chemical reactions or change in physical state.

HEALTH HAZARDS , such as poisoning, allergic response, or disease, occur from the inhalation, ingestion, or absorption of the material through the skin or eyes.

ACQUISITION OF HAZARDOUS MATERIALS

- Identify Procurements involving Hazardous Materials
  - Federal Std. 313C, 'Material Safety Data for Hazardous Materials Furnished to Government Activities'
  - Use generic identifier

- Invoke procurement specifications
  - Hazardous Material and Material Safety Data Clause, NASA FAR Supplement, Part 52.223.3,
  - Line item requiring labeling in accordance with 29CFR 1910.1200 (f)(1)
  - Provisions for Trade Secret information in accordance with 29CFR 1910.1200 (i)(3)

RECEIPT OF HAZARDOUS MATERIALS

- **OSHA Regulations come into effect on receipt of the material**
- **Recieving Inspection**
  - **Verify container labeling meets 29CFR 1910.1200 (f)(1)**
  - **Verify MSDS is recieved with shipment or already available**
- **Update Hazardous Material List**
- **Update Material Safety Data Sheet file**

STORAGE OF HAZARDOUS MATERIALS

- Maintain inventory record of Hazardous Materials to point of issueance to user
- Maintain 'ready access' to MSDSs for each Hazardous Material
- Ensure that container labels are preserved throughout the storage cycle of the Hazardous Material
- Unless otherwise directed by Safety or Fire organizations, store in accordance with special precautions identified on Manufacturers container label.

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ISSUEANCE OF HAZARDOUS MATERIALS

- **Do not distribute Hazardous Materials when:**
  - **Containers are improperly labeled**
  - **Material Safety Data Sheets are not avaliable for the item**

- **When Hazardous Materials are recontainerized prior to distribution, relabel containers in accorance with 29CFR 1910.1200 (f)(1)**

CONTAINER LABELING

- **Container labeling/relabeling is required prior to distribution when:**
  - **Container label becomes damaged or otherwise illegible during storage cycle.**
  - **Hazardous Material is recontainerized or repackaged**

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EXCESS PROPERTY

- Excess Property disposition requires:
  - Containers must be labeled in accordance with 29CFR 1910.1200 (f)(1)
  - Material Safety Data Sheet must be provided with each Hazardous Material sold

- The OSHA Hazard Communication Standard does not apply to Hazardous Wastes

HAZARDOUS MATERIALS/WASTE MANAGEMENT

ENVIRONMENTAL REGULATIONS OVERVIEW

Michael Green
Facilities Operations
and Maintenance Division

HAZARDOUS MATERIALS

- FEEDSTOCKS, CLEAN SOLVENTS, LAB REAGENTS
- STORAGE REGULATED BY OSHA
- CERTAIN ENVIRONMENTAL REQUIREMENTS MAY EXIST
    - STATE ENVIRONMENTAL REGULATIONS
    - SPILL CONCERNS - SECONDARY CONTAINMENT, FLOOR DRAINS
    - COMMUNITY RIGHT-TO-KNOW

HAZARDOUS WASTE

- DISCARDED MATERIAL, DETERMINED TO BE HAZARDOUS
    - CHARACTERISTIC OR LISTED
    - SOLID, LIQUID OR CONTAINED GAS
- SOURCES
    - BY-PRODUCT OF PROCESS
    - SPENT CLEANING SOLVENT
    - LAB WASTE
    - OUTDATED HAZARDOUS MATERIALS
    - SPILLS

HAZARDOUS WASTE (CONTINUED)

- GENERALLY HANDLED BY ENVIRONMENTAL STAFF, BUT YOU MAY:
  - BE A GENERATOR
  - HAVE SATELLITE ACCUMULATION POINT
  - MANAGE WASTE STORAGE FACILITY
  - HAVE A SPILL
- PERSONNEL NEED TO BE AWARE OF POTENTIAL PROBLEMS
  - TRAINING
  - RESPONSIBLE MANAGEMENT

WASTE MINIMIZATION

- REGULATORY REQUIREMENT
- ECONOMICAL
- SOURCE REDUCTION
    - PRODUCT CHANGES
    - INPUT MATERIALS
    - PROCESS, MATERIAL, AND OPERATING CHANGES
    - MANAGEMENT PRACTICES
    - WASTE SEGREGATION
- RECYCLING/RECLAIMING

RECYCLED/RECLAIMED MATERIALS

- EXEMPTED FROM FEDERAL HAZARDOUS WASTE REGULATIONS
- ON-SITE - EX.: SOLVENT RECOVERY
- OFF-SITE EX.: BATTERIES, SOLVENTS
- POSSIBLE PROBLEMS
    - REGULATIONS UNCLEAR
    - STATE REGULATIONS
    - IMPROPER HANDLING BY RECYCLERS
    - SCAM RECYCLING
- TRAINING

USED OIL

- NOT CURRENTLY REGULATED BY EPA
    - COULD BE IN THE NEAR FUTURE
- REGULATED BY SOME STATES - CALIFORNIA
- GENERALLY SENT OFF-SITE FOR RECYCLING AS REVENUE SOURCE
- POSSIBLE PROBLEMS
    - FUTURE REGULATIONS LIKELY
    - IMPROPER HANDLING BY RECYCLERS
    - PRICE HAS DROPPED
    - CONTAMINATION - CHLORINATED SOLVENTS, DRUM RESIDUES
    - CARELESS STORAGE/STOCKPILING

OFF-SITE DISPOSAL, INCLUDING RECYCLERS

- CAREFUL SCREENING
- ENVIRONMENTAL AUDITS
- MINIMIZE FUTURE LIABILITY
- COST SHOULD NOT BE ONLY SELECTION CRITERIA

COMMUNITY RIGHT-TO-KNOW

- IN ADDITION TO WORKER RIGHT-TO-KNOW
- NASA VOLUNTARILY COMPLYING WITH NOTIFICATION REQUIREMENTS
- DOCUMENTATION HANDLED BY ENVIRONMENTAL STAFF
- SOME REQUIREMENTS DO NOT APPLY TO ALL CENTERS
- WAREHOUSE PERSONNEL NEED TO TRACK QUANTITIES AND LOCATION OF MATERIALS BEING STORED

SPILLS

- MOST SERIOUS SITUATION LIKELY TO OCCUR
- PROPER STORAGE AND HANDLING WILL MINIMIZE SPILLS AND RESULTANT DANGER
- DO NOT ATTEMPT TO HANDLE IF NOT PREPARED
- REPORT TO FIRE DEPARTMENT AND/OR ENVIRONMENTAL STAFF IMMEDIATELY
- QUICK RESPONSE MINIMIZES ENVIRONMENTAL DAMAGES

SUMMARY

- HANDLING AND DISPOSAL OF WASTE IS EXPENSIVE AND TIME CONSUMING
- SUPPLY PERSONNEL HAVE LEGITIMATE CONCERNS DUE TO QUANTITIES OF HAZARDOUS MATERIALS HANDLED
- MOST SUPPLY OFFICES ARE INVOLVED WITH WASTE TO SOME DEGREE
- NEED TO WORK CLOSELY WITH ENVIRONMENTAL STAFF
- PROMOTE WASTE MINIMIZATION - EX.: CONTROL QUANTITIES IN STORAGE
- ENSURE TRAINING
- SCREEN RECYCLERS AND OFF-SITE DISPOSAL CONTRACTORS

Alan Farmer
RCRA
Region 4
Atlanta GA

DEFINITION OF HAZARDOUS SUBSTANCE:

1) Any material that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive.

2) Any substance designated by EPA under CERCLA to be reported if a designated quantity of the substance is spilled in the waters of the United States or if otherwise emitted to the environment.

DEFINITION OF HAZARDOUS MATERIAL:

A substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated.

DEFINITION OF HAZARDOUS WASTE:

As defined in RCRA, the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristic may -

A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or

B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

HAZARDOUS WASTE (CONT.):

As defined in the regulations, a solid waste is hazardous if it meets one of four conditions:

1) Exhibits a characteristic of a hazardous waste - ignitability, corrosivity, reactivity, or toxicity (40 CFR Section 261.20 through 261.24)

2) Has been listed as hazardous (40 CFR Section 261.31 through 261.33)

3) Is a mixture containing a listed hazardous waste and a nonhazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous wastes)

Is not excluded from regulations as a hazardous waste

A generator may accumulate hazardous waste on-site for 90 days or less as long as the following requirements are met:

- Proper Storage -- The waste is properly stored in containers or tanks marked with the words "Hazardous Waste" and the date on which accumulation began.
- Emergency Plan -- A contingency plan and emergency procedures to use in an emergency must be developed.
- Personnel Training -- Facility personnel must be trained in the proper handling of hazardous waste.

If the generator accumulates hazardous waste on-site for more than 90 days he is considered an operator of a storage facility and must comply with the Subtitle C requirements for such facilities.

(c)(1) A generator may accumulate as much as 55 gallons of hazardous waste or one quart of acute hazardous waste listed in section 261.33(e) in containers at or near any point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste, without a permit or interim status and without complying with paragraph (a) of this section provided he:

(i) Complies with section 265.171, 265.172, and 265.173(a) of this chapter, and

(ii) Marks his containers either with the words "Hazardous Waste" or with other words that identify the contents of the containers.

(2) A generator who accumulates either hazardous or acutely hazardous waste listed in section 261.33(e) in excess of the amounts listed in paragraph (c)(1) of this section at or near any point of generation must, with respect to that amount of excess waste, comply within three days with paragraph (a) of this section or other applicable provisions of this chapter. During the three day period the generator must continue to comply with paragraphs (c)(1)(i) through (ii) of this section. The generator must mark the container holding the excess accumulation of hazardous waste with the date the excess amount began accumulating.

ORIGINAL PAGE IS
OF POOR QUALITY

CONTRACT TRANSITION
PANEL

C-2

CONTRACT PHASE-IN

- TRANSITION PLANNING / SCHEDULING
- GOVERNMENT / CONTRACTOR COMMUNICATION
- CONTRACTOR / CONTRACTOR INTERFACE
- SPECIAL CONCERNS WITH CONSOLIDATED CONTRACTS
- LABOR RELATIONS

WORKFORCE TRANSITION

- UNION vs NON-UNION
- EMPLOYEE BRIEFINGS AND ORIENTATION
- SERVICE CONTRACT ISSUES
  - Wages
  - Benefits
- WORKFORCE CONTINUITY
  - Marginal Supervisors
  - Marginal Employees
  - Key Employees to Retain

JOINT APPROACH TO CONTRACT PHASE-IN AND PERFORMANCE

- AGREE ON PLANS TO REMEDY PROBLEM AREAS
- MONITOR PROGRESS
- DISCUSS PROGRESS OFTEN
  Don't wait for six month evaluation
- GOVERNMENT AND CONTRACTOR MUST ACT AS A TEAM. MUST NOT OPERATE IN A VACUUM.
- IMMEDIATE PERFORMANCE FEEDBACK

LESSONS LEARNED

- UP FRONT NEGOTIATIONS
- FIX PROBLEM AREAS IMMEDIATELY
- ON-GOING GOVT. / CONTRACTOR COMMUNICATION

SUPPLY AND EQUIPMENT CONFERENCE CONTRACTOR PANEL

SUPPORT SERVICE CONTRACTORS (SSC) TRANSITIONS

- PHYSICAL INVENTORY (WALL-TO-WALL) DURING PHASE-IN
- TRANSFER OF INFORMATION WRITTEN AND ELECTRONIC RECORDS AND FILES
- AN AWARENESS OF THE OVERALL CONTRACT COST IMPACT AGREEMENTS BETWEEN SSC AND EMPLOYEES UNION

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NASA AMES, MOFFETT FIELD
CENTER TRANSITION
CONTRACT PROPERTY CUSTODIAN

1. Preliminary Considerations:

A. How will center be divided (i.e. by location, organization code or other method) ?

B. What existing reports can the contractor use to facilitate the transition ?

D. What computer generated reports can be developed to assist in transition inventory ?

E. How will the contractor gain responsibility for equipment (i.e. transition inventory) ?

F. What special deviations should the center consider submitting to headquarters to ease the enormity of the task?

G. How will account numbers change during the transition in order to separate records that have been verified and transferred to the new contract custodians from records that require further resolution from the current custodians prior to the transfer of responsibility.

H. How will current custodians be notified of status of account and action required to resolve discrepancies ?

I. What new innovations can be developed and implemented to further enhance the directives in the 4200 manual and improve our methods of controlling equipment.

J. Who will conduct triennial, 20% and 100% sensitive items inventories ?

K. How will custodian change inventories be handled ?

L. How can center management support transition and emphasize the importance of equipment control ?

M. Who will develop and approve standard operating procedures.

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A8-5

2. Internal Tracking Procedures:

A. Reporting equipment missing from assigned locations during the transition inventory.

1. How will missing items be recorded?
2. How will missing items be reported?
3. Who will resolve discrepancies?
4. What time limitation will be invoked?
5. What follow-up measures will be required?

B. Reporting misplaced equipment found in locations other than the computer reflected locations.

1. How will misplace equipment be recorded?
2. How will misplaced equipment be labeled?
3. How will misplaced equipment be matched to clear missing items?
4. How will misplaced equipment be reported?
5. How will misplaced equipment be resolved?

C. Notify calibrations of common equipment changes.

1. How to remove record ID 'B' from NEMS.
2. Whether or not to report missing ID 'C' equipment.
3. How to involve calibrations in decontrolling items.

D. Found on Station procedure.

1. How to report F.O.S. equipment.
2. How to ensure item is F.O.S. and not a retag.
3. Report submission deviation.
4. How to record as part of transition inventory.

E. Records Check procedure.

1. How to check an item with a tag that does not appear on inventory printout.
2. What steps should be taken to enter item into NEMS.
3. What information is required.

F. Return from previous survey procedure.

1. Who assumes responsibility?
2. How to determine account designation.
3. How to record as part of transition inventory.

3. **Lessons Learned:**

   A. Account designation.
   B. Inventory team set-up.
   C. Handling input and labeling of misplaced equipment.
   D. Follow-up for discrepancies.
   E. Missing equipment theory.

4. **Innovations:**

   A. Color coded Zone Labels.
   B. Modified master input forms.
   C. Internal routing slip for user equipment status reporting.
   D. Alignment of Equipment Management Specialist and Inventory Clerks.
   E. User accountability poster.
   F. Use of lotus spreadsheets to track and report missing and misplaced items.
   G. Inventory by location rather than account.
   H. Center management communications.
   I. Equipment Management Specialist Poster.
   J. Astrogram reminders.

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IF THIS EQUIP. IS MOVED
CONTACT THE EQUIP. SPEC.
FOR ZONE 8 AT X4-3229

IF THIS EQUIP. IS MOVED
CONTACT THE EQUIP. SPEC.
FOR ZONE 8 AT X4-3242

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NASA

Found On Station (FOS) Equipment Investigation

Note. – See instructions on reverse. Please type or print clearly.

NAME AND TITLE OF INDIVIDUAL POSSESSING EQUIPMENT Dan Iller, EQUIPMENT MANAGEMENT SPECIALIST	OFFICE/MAIL CODE 255-2	DOCUMENT NO.*
ITEM NAME ************ SEE ATTACHED ************	MODEL *******	FSC ****
MANUFACTURER AND YEAR MANUFACTURED **************************************	SERIAL NO. *******	EQUIP. CONTROL NO.* ****

ACQUISITION COST**	LOCATION OF EQUIPMENT			DATE FOUND
	BLDG	ROOM	OTHER	
****	*********	****	******	******

PROPERTY CUSTODIAN (Name and signature) Dan Iller, EQUIPMENT MANAGEMENT SPEC.	OFFICE/MAIL CODE *****	ACCOUNT CODE	DATE SIGNED *******

PART I – INVESTIGATION AND STATEMENT OF CIRCUMSTANCES

1. SOURCE OF EQUIPMENT FOUND (Check and complete where applicable)

☐ PURCHASED ☐ LEASED ☐ GOVERNMENT TRANSFER ☐ GOVERNMENT EXCESS ☐ CONTRACTOR EXCESS ☒ OTHER Transition Inventory

FROM: N/A (Name of Contractor, Vendor, Government Agency) N/A (City and State) N/A (Date Received)

AUTHORITY: N/A (Contract/P.O. No. or Other) N/A (Requisition) N/A (Org. Code)

METHOD OF DELIVERY: CONTRACTOR/VENDOR TO USER RECEIVING DOCK TO USER CONTRACTOR INSTALLED

MOTOR FREIGHT CARRIER N/A TO USER

HAND CARRIED BY N/A OTHER N/A

FABRICATED BY: N/A. (Shop or Technician) N/A (Work Order No.)

N/A (Requisition) N/A (Org. Code)

2. EXPLANATIONS (Add to explain why item was not identified upon receipt, delivered through receiving, etc. Continue on separate sheet, if necessary)

The Zone 2 inventory team found numerous items in this Zone which meet hte criteria for control and not on the Center's equipment records. These items ate listed on the attached documents.

3. INVESTIGATION AND FINDINGS BY (Name and signature) Dan Iller	4. OFFICE/MAIL CODE 255-2	5. DATE

PART II – ACTIONS

1. USER DIVISION/DIRECTORATE REVIEW

a. RECOMMENDATION TO PREVENT RECURRENCE

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b. TYPED OR PRINTED NAME AND TITLE	c. SIGNATURE	d. DATE

01-86

CAPITAL EQUIPMENT ACCOUNTABILITY MASTER RECORD INPUT
"NEMS"

*1. TRANSACTION CODE→

*2. EQUIPMENT CONTROL NO.→ F.O.S.

3. ACQUISITION DOCUMENT NO.→

*4. DATE INST. ACQ.→ M M D D Y Y

*5. ITEM NAME→

*6. MFG. CODE→

*7. MFG. MODEL NO.→

*8. SN→

*9. YEAR MFG.→

*10. FSN/NSN→ [redacted]

*12. COST→

13. ESTIMATED COST (Y OR N)→

*14. CUST. ACCT. NO.→

15. USER NO.→ [redacted]

*17. BLDG. NO.→

18. ROOM NO.→

*19. CAPITAL SENSITIVE CODE→ [redacted]

21. AVAILABILITY STATUS CODE→ [redacted]

[redacted]

MFG. NAME→

USER NAME→

LOCAL DATA→

*MANDATORY INPUTS

(REV. AUG. 87)

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CAPITAL EQUIPMENT ACCOUNTABILITY MASTER RECORD INPUT "NEWS"

MISPLACED EQUIPMENT

*1. TRANSACTION CODE→

*2. EQUIPMENT CONTROL NO.→

[redacted] *4. DATE FOUND M M D D Y Y

*5. ITEM NAME→ *6. ZONE

*7. MFG. MODEL NO.→ *8. SN→

[redacted] *10. BLDG NO. 11. ROOM NO.

[redacted] *14. CUST. ACCT. NO.→

15. USER NO.→ [redacted] *17. BLDG. NO.→

18. ROOM NO.→ [redacted]

[redacted]

*20. PO/CONT. NO.→

MFG. NAME→

USER NAME→

LOCAL DATA→

*MANDATORY INPUTS

AAF 1 (REV. AUG. 87)

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CAPITAL EQUIPMENT ACCOUNTABILITY MASTER RECORD INPUT
"NEWS"

*1. TRANSACTION CODE→ ☐☐ RECORDS CHECK

*2. EQUIPMENT CONTROL NO.→ ☐☐☐☐☐☐

3. ACQUISITION DOCUMENT NO.→ ☐☐☐☐☐☐☐☐☐☐☐ *4. DATE M M D D Y Y ☐☐☐☐☐☐

*5. ITEM NAME→ ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ *6. MFG. CODE→ ☐☐☐☐☐

*7. MFG. MODEL NO.→ ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ *8. SN→ ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

*9. YEAR MFG.→ ☐☐ *10. FSN/NSN→ ☐☐☐☐☐☐☐☐☐☐☐☐☐ [redacted]

*12. COST→ ☐☐☐☐☐☐☐☐☐☐☐ [redacted] *14. CUST. ACCT. NO.→ ☐☐☐☐☐

15. USER NO.→ ☐☐☐☐☐☐ [redacted] *17. BLDG. NO.→ ☐☐☐☐☐

18. ROOM NO.→ ☐☐☐☐☐ *19. CAPITAL SENSITIVE CODE→ ☐ [redacted]

21. AVAILABILITY STATUS CODE→ ☐ [redacted]

[redacted]

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MFG. NAME→ ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

USER NAME→ ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

LOCAL DATA→ ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

*MANDATORY INPUTS

AAF 1 (REV. AUG. 87)

INTERNAL EQUIPMENT MOVEMENT FORM

Zone Number:	Equipment Specialist:	Mail Stop:

Equipment Movement Information

Submitted by:	Name	Ext.	M/S	Date:
Decal(s) Being Moved:				
Typed Name and Signature of Current User:				Org. Code:
Typed Name and Signature of New User:				Org. Code:
Current Location:	Bldg.:			Room:
New Location:	Bldg.:			Room:
Current Org. Code:				
New Org. Code:				
How Long Will Equipment Require Relocation?				
Other Information or Comments:				
				AAF 2 (Oct 89)

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EQUIPMENT USER RESPONSIBILITIES

- Properly use, care, and protect all Government equipment under the user's custody and control.
- Notify the Installation Security Operations Officer and cognizant Equipment Management Specialist immediately if theft of Government property is suspected.
- Ensure the use of Government equipment is for the conduct of official business only.
- Report missing equipment within 30 working days, and the transfer, location change, user change, cannibalization, modification, and fabrication of equipment to the cognizant Equipment Management Specialist.
- Report untagged equipment found on center (that meets the criteria for control) to the cognizant Equipment Management Specialist to establish proper controls. This responsibility includes equipment delivered directly to requestors.
- Submit NASA Form 892 (Property Pass and Removal Permit) for off-site use to the cognizant Equipment Management Specialist for concurrence, and to the cognizant Division Chief for approval, before equipment is removed. If the 30-day limit will be exceeded, property passes must include a written explanation from the user and the signature of the Branch Chief authorizing the special circumstances.
- Submit ARC Form 66 (Shipping Document) to the cognizant Equipment Management Specialist to obtain Equipment Management Branch Chief/ Contracting Officer approval before controlled equipment is sent off-site for maintenance or warranty service.
- Report equipment no longer needed, or not being actively used in pursuit of approved NASA programs and projects, to the cognizant Equipment Management Specialist. ***Under no circumstances will an employee throw away Government equipment or remove Government identification decals and tags.***
- Ensure the physical identification (as such) of vendor-owned and employee-owned equipment.
- Notify the cognizant Equipment Management Specialist when terminating Ames Research Center employment.

NOTE: An employee may be subject to disciplinary action for any loss, damage, or destruction of Government property resulting from the employee's negligence, misuse, dishonesty, or wanton and willful misconduct.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AMES RESEARCH CENTER
MOFFETT FIELD, CALIFORNIA 94035

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AMES RESEARCH CENTER
MOFFETT FIELD, CALIFORNIA 94035

RESPONSIBILITIES OF EQUIPMENT USERS

- Proper use, care, and protection of all Government equipment under their custody and control.
- Notifying the Installation Security Operations Officer immediately if theft of Government property is suspected.
- Ensuring that Government equipment is used only in the conduct of official business.
- Reporting missing equipment, transfers, location changes, and user changes to the responsible Equipment Management Specialist.
- Reporting untagged equipment that meets the criteria for control (found on station) to the responsible Equipment Management Specialist to establish proper controls. This responsibility includes equipment delivered directly to requestors.
- Submitting NASA Form 892 (Property Pass and Removal Permit) to the cognizant Equipment Management Specialist for concurrence and to the cognizant Division Chief for approval before equipment is removed for off-site use. Property passes exceeding the 30 day limit must be accompanied by a written explanation from the user with the signature of the Branch Chief authorizing the special circumstances.
- Submitting ARC Form 66 (Shipping Document) to the cognizant Equipment Management Specialist to obtain Equipment Management Branch Chief/ Contracting Officer for approval before controlled equipment is sent off-site for maintenance or warranty service.
- Notifying the cognizant Equipment Management Specialist when equipment is not being actively used in pursuit of approved NASA programs and projects.
- Ensuring that equipment is turned in to the Property Disposal Officer when no longer needed. Under no circumstances will an employee throw away Government equipment or remove Government identification decals and tags.
- Ensuring vendor-owned and employee-owned equipment are physically identified as such.

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NOTE: An employee may be subject to disciplinary action for any loss, damage, or destruction of Government property resulting from the employee's negligence, misuse, dishonesty, or wanton and willful misconduct.

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-Y 4 MISSING 11-7-89

ECN	ITEM NAME	MODEL NUMBER	SERIAL NUMBER	BLDG. FOUND	ROOM FOUND	DATE FOUND	FOUND BY	SHOULD BE BLDG	SHOULD BE ROOM	ASSIGNED CUST ACCT
003844	CAMERA, TELEVISION	V808A	001					208	108	EDP
003492	DISK DRIVE UNIT	XT2190	288876					207	201	FAS
003490	DISK DRIVE UNIT	XT2190	288987					207	201	FAS
003484	OSCILLOSCOPE	2440	8010709					207	140F	RTA
005708	CAMERA, POLAROID	SPECTRA	J801FB4TVA					208	114	EDP
005914	GENERATOR, PULSE	DG503	01588					207	140D	RTA
008977	ENCODER, TELEVISION	YA-810N	NONE					208	101	EDP1
L00296	PHOTOGRAPHIC FILM SPLICER	FM16	517					208	101	EDP
100702	GENERATOR/READER, TIME CODE	F200	200844					208	108A	EDP1
100786	BICYCLE	LADIES	A87C610999					208	REAR	CF
100787	BICYCLE	LADIES	A87C610482					208	REAR	CF
100802	RECORDER, TAPE	WM-D6C	100717					208	104	EDP
100808	MONITOR, WAVEFORM	TVM620	088701882					208	108	EDP1
100912	DETECTOR, LEAK	94810	20084					207	0001A	RTF4
101287	POWER SUPPLY, PULSE	NONE	8-1000V8D					207	207	FAO
101262	PRINTER, LINE	P14PA	03014967					208	230	CF
101276	GENERATOR, CHARACTER	MG100	87-I-187					208	108	EDP1
101485	RECEIVER, RADIO	A03THC8448AC	4188MU0084					208	101	EDP
101312	TRUCK, DELIVERY	458	399981					208	OUTSIDE	AA01
101461	TRUCK, DELIVERY	458	399802					208	OUTSIDE	AA01
101885	RECORDER SET, VIDEO	CVC18	30144					208	108	EDP1
101904	READER, ELECTRONIC	E0080	8-02944					207	149	[illegible]
104832	DISK DRIVE UNIT	ROUR	8534					208	103A	EDP1
104802	SCANNER, BAR CODE	0140-080P000	012985					208	114	EDP
104800	SCANNER, BAR CODE	0140-080P000	012184					208	114	EDP
105081	DENSITOMETER	TLC-985	TLC0880					208	216A	EDP0
105406	AMPLIFIER	6102	A50839					207	001A	RTA
105407	CONVERTER, DIGITAL/A	4200	85740					207	001A	RTA
105785	MONITOR	CRT810H	087184					208	116	CF
105774	CAMERA, TELEVISION	AG-140	C7H000430					208	106	EDP1
105867	RECORDER, VIDEO CASSETTE	VO-5800	78808					208	106	EDP1
105917	CAMERA, TELEVISION	KP1400	7080844					208	108	EDP
216187	CAMERA, TELEVISION	FP2-81	3030869					208	1108	EDP1
216177	CHARGER, BATTERY	PAG 9484	11988					208	1108	EDP1
216080	CAMERA, TELEVISION	FP-Z81UC	3091181					208	1108	EDP1
216784	PANEL, OPERATION	BP-Z81U	8090810					208	108A	EDP1

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Misplaced items

ECN	ITEM NAME	MODEL NUMBER	SERIAL NUMBER	BLDG. FOUND	ROOM FOUND	DATE FOUND	FOUND BY	SHOULD BE BLDG	SHOULD BE ROOM	ASSIGNED CUST ACCT
830811	MONITOR	M0401	5159076	045	001	07-Feb-89	MC	809	D-01	BLK10
830917	MONITOR	M0401	5140744	044	1	20-Apr-89	KJ	TA05	T006	RIA
830918	COMPUTER, MICRO	M3650	F791081XM405	044	1	20-Apr-89	KJ	TA03	T006	RIA
831701	(4843811) PRESSURE COMPUTER	6009	745-0.810	810	100	18-Apr-89	DI	807	1000	RAF14
831747	MONITOR/CRT	0001	10408	8810	170	08-Mar-89	KJ	810	[illegible]	ETT
831097	DISK DRIVE UNIT	FX40	08117760	TA15	T034	08-May-89	DI	810	10[illegible]	DQ
831099	DISK DRIVE UNIT	FX40	08117340	TA15	T034	08-May-89	DI	810	118	DQ
838190	RECORDER, REPRODUCER	M1010E9FHAAAAT	700085900C09	811	100	07-Jul-89	MD	807	107	FAR
838019	TYPEWRITER	0014	NONE	858	114	18-Sep-89	KJ	858	116	GAAF1
888171	COMPUTER, MICRO	3011	F91780J	848	804	08-Jul-89	KJ	809	809	SOE08
838178	PRINTER	M6000	CA9049ED	848	804	08-Jul-89	KJ	809	809	SOE08

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4-5-89
Missing Calibration Items

ECN	ITEM NAME	MODEL NUMBER	SERIAL NUMBER	BLDG. FOUND	ROOM FOUND	DATE FOUND	FOUND BY	SHOULD BE BLDG	SHOULD BE ROOM	ASSIGNED CUST ACCT
013371	OSCILLOSCOPE	585	7485					245		SSD07
016404	OSCILLOSCOPE	585	6058					245		SSD07
017429	PLUG-IN, HIGH GAIN DIFF	D	7624					245		SSA
023888	POWER SUPPLY	UR40-8A	77					206		SA01
024308	PLUG-IN, OSCILLOSCOPE	3A6B	1698					204		SA01
024630	PLUG-IN, LOW LEVEL DIFF	E	5984					245		SSA
024861	PLUG-IN, OSCILLOSCOPE	3A72	2788					204		SA01
027088	RECORDER,8 CH.(NR)	MX-936	183					206		SA01
028046	VOLTMETER, RMS	3400A	1840					204		SA01
028108	VTVM	400D	48468					206		SA01
028401	ANALYZER PULSE HEIGHT	,404C	9007					245		SST
028603	PLUG-IN, OSCILLOSCOPE (NR)	3A1	7304					245		SSA
028604	PLUG-IN, OSCILLOSCOPE (NR)	888	8847					245		SSA
028998	FAST RISE PLUG-IN	L	21761					204		SA01
029627	HYDRO-THERMOGRAPH	594	11806					204		SP
029631	HYGRO-THERMOGRAPH	694	11884					206		L008
031770	DUAL TRACE PLUG-IN	1A1	10777					204		SA01
032018	POWER SUPPLY	B6236A	A11083					245		SSA
032344	SHAKING INDICATOR	12-X2	NONE					206		SLN08
033601	GENERATOR PULSE (NR)	101	40817					245		SSA
034308	MULTIMETER(NR)	383	8218					204		SA01
034895	VOLTMETER DIGITAL	889	3807					206		SA01
035984	MULTMETER, DIGITAL	7050	NONE					206		SA01
035479	POWER SUPPLY (NR)	401A	8071					245		SSU
036099	VOLTMETER, DIGITAL	3440A	897-08675					245		SSA
036283	PLUG-IN UNIT, DV METER	3443A	N/L					245		SSA
037810	POWER SUPPLY (NR)	6289A	1778					247		SA01
038727	OPERATIONAL AMP PLUG-IN	D	4698					236		SA01
039291	DVM	3460A	300748					204		SA01
039829	HYGROTHERMOGRAPH	S-594-8	6680					234		L008
039888	VOLTMETER, RMS	8920A	8011					245		SSA
040048	PLUG-IN (NR)	1402A	4483					236		SLN08
040064	OSCILLOSCOPE(NR)	1410	00201					204		SLN08
040082	PLUG-IN (NR)	1421A	8786					236		SLN08
040107	AMPLIFIER	118	471					245		SSA
040129	DEMODULATOR	C-1	10138					245		SSA

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National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035

NASA

JAN 17 1989

Reply to Attn of: AAF:255-2/788-185

TO: Resident Staff

FROM: T. F. Hammond, Chief, Logistics Management Division

SUBJECT: Contract Property Custodian Program

The Ames contract property custodian program, which has been approved by center management, calls for the establishment of eight contract billets to relieve the current property custodians of their responsibilities. The eight full-time contract property custodians will be co-located in their areas of responsibilities and handle the Center's equipment assets.

The implementation of this program is consistent with a recent change in agency policy that allows Supply and Equipment Management Officers to appoint full-time property custodians, responsible for the management of equipment by geographic location. The Supply and Equipment Management Officer will oversee the management of any such program, and Directors/Division/Branch Chiefs and equipment users will continue to be responsible and accountable for the use, care, and protection of assigned equipment. Directors/Division/Branch Chiefs retain responsibility for conducting annual walk-through inspections and utilization reviews. Assigned users retain responsibility for notifying cognizant contract property custodians of all activity associated with the users' assigned equipment.

We plan to begin this transition in February 1989, with a target completion date of June 1989. The attached map shows the 8 property zones. They are bounded by the heavy dark lines. Some zones are split into more than one location. The property custodian locations are identified in upper left hand portion of the map. All current custodians will continue to be held accountable for equipment within their accounts until they are notified in writing that all or part of their equipment has been accounted for and transferred into new contract custodian accounts. Each contract property custodian will be responsible for monitoring equipment within their assigned area.

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Any policy or procedural questions may be addressed to Rick J. Serrano, Chief, Equipment Management Branch, at extension 45137.

T. F. Hammond

Enclosure

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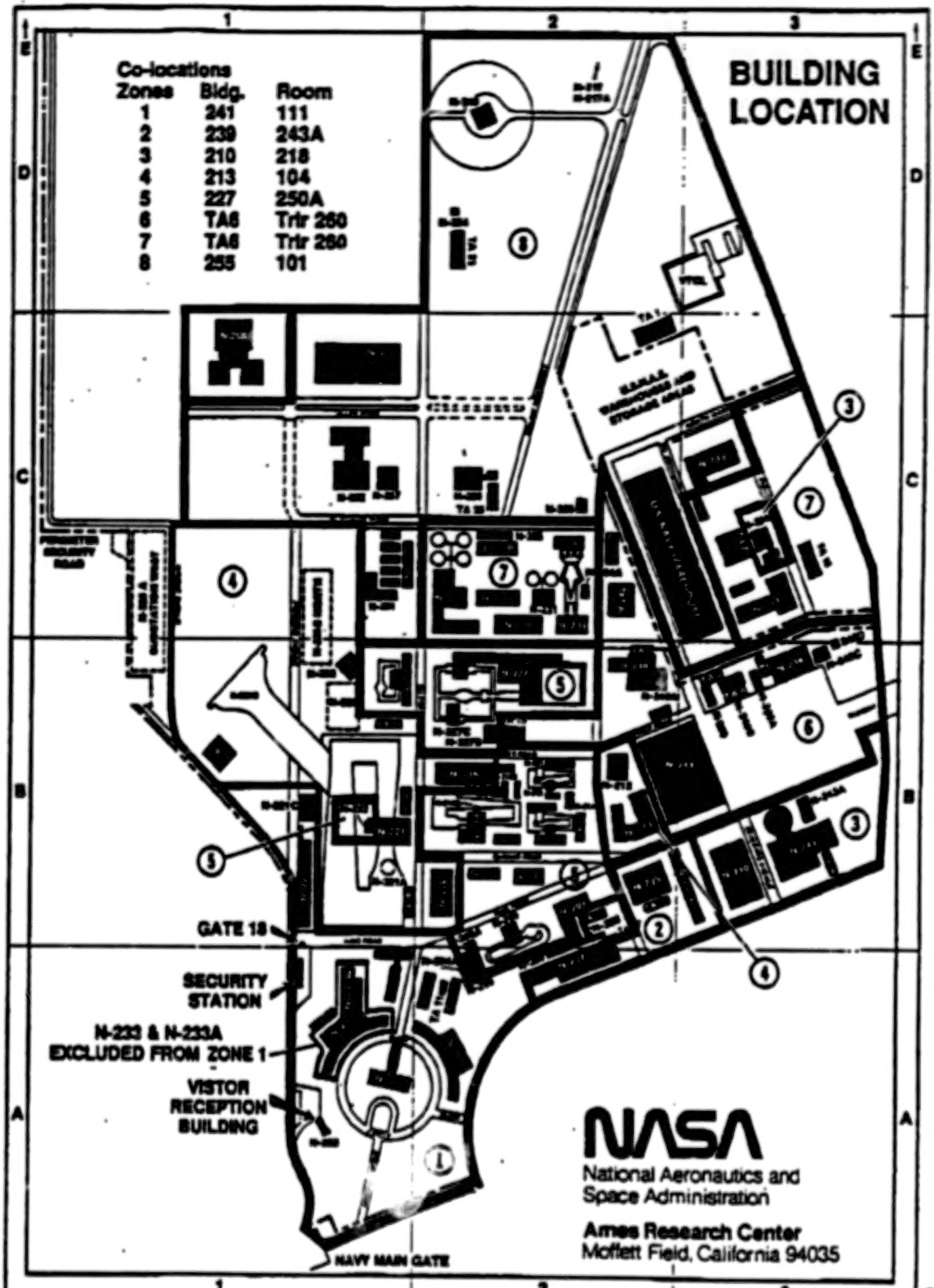
BUILDING LOCATION
1
2
3
A
B
C
D
E
GATE 18
SECURITY STATION
N-233 & N-233A EXCLUDED FROM ZONE 1
VISTOR RECEPTION BUILDING
NAVY MAIN GATE
①
②
③
④
⑤
⑥
⑦
⑧
NASA
National Aeronautics and Space Administration
Ames Research Center
Moffett Field, California 94035

Co-locations

Zones	Bldg.	Room
1	241	111
2	239	243A
3	210	218
4	213	104
5	227	250A
6	TA6	Trlr 260
7	TA6	Trlr 260
8	255	101

August 1988

98-21

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035

NASA

FEB 22 1989

Reply to Attn of: AAF:255-2/F89-19

TO: Ames Moffett Resident Staff

FROM: T. F. Hammond, Chief, Logistics Management Division

SUBJECT: Equipment User Responsibility

Equipment users are a vital element in maintaining our strong equipment management program. Specifically, equipment users are responsible for the proper use, calibration, repair, and condition of equipment under their control; ensuring that equipment is used only in the conduct of official business; and identifying idle equipment for possible reutilization. In addition, the user must report any movement of tagged equipment to the equipment specialist to ensure proper tracking and equipment record update. The equipment specialist for any given property management area is responsible for maintaining the individual property records (NASA Form 1602's) for equipment assigned to their account. Therefore, the master equipment records will only be as accurate as the information provided by the user. Users are expected to cooperate fully in making equipment reassignments and movements known to the appropriate equipment specialist. When an equipment item is reported lost, damaged, or destroyed, the last known user of the equipment is responsible for annotating the statement of circumstances and obtaining the cognizant Division Chief signature on the required survey report prior to submittal to the resident equipment specialist for processing.

The removal of Government property from Ames Moffett is permissible for official temporary use and when such use is necessary or beneficial to the conduct of NASA's mission or other Government purposes. Approval must be obtained via NASA Form 892, Property Pass Request and Removal Permit, signed by the cognizant equipment specialist and approved by the cognizant Division Chief.

As you know, with the exception of ED, RC, and RN, custodian responsibilities have been assumed by full-time equipment specialists of the Administrative Support Services Contractor, QUAD S Company. The laser-scanned inventory, requests for cannibalization of equipment, Found on Station (FOS) reports, and approvals for removal of equipment from Ames will be

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processed by each area specialist. All Government Furnished Property (GFP) and all equipment loans shipped via ARC Form 66 must be coordinated with the area equipment specialist. The attachment to this memorandum contains the locations, names, and phone numbers of equipment specialists, by area, along with the representatives for organizational codes ED, RC, and RN. Please keep this information for future reference.

Your cooperation will help the Center better manage its equipment by ensuring the accountable records remain accurate.

T. F. Hammond

Enclosure

89/44

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98.23

PHONE NUMBERS, ETC.

EQUIP. SPEC./CUST.	ZONE	BUILDINGS SERVED	EXT.	BLDG.	ROOM
EFREN GARCIA	01	200,201,202,202A,203 204,204A,205,208,209 221C,223,233,233A,241 253,253A,TA13,TA17,TA18	3830	241	11
DAN ILLER	02	237,239,239A,TA10	3826	239	2439
ROCKY HERNANDEZ	03	210,243,243A,256 TA8. CROWS LNDG.	3827	210	218
MICHELLE CARBAJAL	04	212,213,220,221 221A,221B,221C,246 247,263,TA12,TA21 TA22,TA16	3828	213	104
VITO PARADO	05	206,206A,207,207A 214,215,216,216A 216B,218,218A,218B 219,222,226,227 227A,227B,227C,227D 235,251,TA14,TA19	3829	229	250A
KELLY JAMES	06	211,240,240A,242 248,248A,248B,248C 248D,252,259,TA2 TA4,TA6,TA23	3825	TA06	T260
BENITA HIBBARD	07	229,229A,229B,230 231,234,234A,238 244,265,TA5,TA15 TA20,TA3	3977	TA06	T260
NORMAN DeLOGE	08	217,236,236A,236B 236C,236D,236E,245 249,250,254,255,257 260,261,262,TA1 TA11,TA25,TA21	5242	255	101
TOBY GONZALES		ALL CODE RC, RIACS	5257	233	207
CONNIE PORIER		ALL CODE ED	5257	233	207
GURLEY TOMAINO		258, ALL CODE RN	4428	258	252

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National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035

JUN 12 1989

Reply to Attn of: AAF:255-2

TO: Organizational Directors, Division Chiefs, and Branch Chiefs

FROM: William F. Ballhaus, Jr., Director

SUBJECT: Equipment Management

I recently received the results of the 1988 equipment physical inventory and an evaluation of Ames' property management effectiveness by the Center's Property Survey Board. Both reports indicate that the Center still has significant equipment management problems. A number of the observations and recommendations focused upon: (1) the failure of some employees to follow the procedures necessary for the protection of Government property; (2) a lack of knowledge and/or attention on the part of managers to ensure adequate control of equipment assigned to their organizations; (3) a lack of documentation to support equipment activity; and (4) equipment management responsibilities that, over time, have been inappropriately delegated by management to staff level positions.

Funding for equipment acquisitions comes with the provision that we safeguard those resources. There is clear guidance for us in the NASA Equipment Management Manual (NHB 4200.1C). Specifically, paragraph 1.306 states that Division Chiefs are the principal equipment using officials responsible for the equipment assigned to their organizations, including all aspects of equipment use and condition.

I am taking this opportunity to request your personal involvement in ensuring that:

(1) corrective actions recommended by the Property Survey Officer and Property Survey Board are completed;

(2) individual equipment users understand they are responsible for safeguarding equipment assigned to them and will be held accountable for equipment losses due to improper care, use, or protection;

(3) all sensitive items are assigned to the actual users;

(4) all employees adhere to documented procedures. Of particular importance is the absolute need for equipment management personnel to be kept informed of the movement of controlled

98:35

equipment, e.g., transfers between organizations, off-site shipments, employee home use, loans to outside organizations, etc. Under no circumstances should controlled equipment be brought to or taken from this Center without equipment management personnel coordination.

Tom Hammond, Chief of the Logistics Management Division, will be contacting each division chief to arrange a meeting with the division chief, his/her branch chiefs, and their cognizant equipment management specialist(s). The purpose of the meeting will be to clarify property management requirements, roles and responsibilities, answer questions, and assure me that everyone understands what is required in this important area of management responsibility. If needed, additional copies of NHB 4200.1C can be obtained from the Logistics Mangement Division, Mail Stop 241-11, extension 45671.

Wm F. Ballhaus, Jr.

William F. Ballhaus, Jr.

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06/89

CHIEF
ORG CD: AAF
MAIL STOP: 255-2

LAA08

98-26

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EQUIPMENT IS OUR BUSINESS

LET US HELP YOU

Efren Garcia
Mail Stop 241-15
4-3830
Zone 1

Dan Iler
Mail Stop 239-7
4-3826
Zone 2

Rocky Hernandez
Mail Stop 210-12
4-3827
Zone 3

Michelle Carbajal
Mail Stop 213-6
4-3828
Zone 4

Vito Parado
Mail Stop 227-5
4-3829
Zone 5

Kelly James
Mail Stop 240A-3
4-3825
Zone 6

Benita Hibbard
Mail Stop 244-17
4-3977
Zone 7

Norman DeLoge
Mail Stop 255-2
4-5242
Zone 8

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Welcome New Employees!

Front Row: Paul Langston, Edward Schilling, Roderick McAfee, Rodrigo David. Second Row: Nancy Silva, Caroline To, Jackie Randall, Ronald Grunstein, Cheryl Wilson. Third Row: David Sedlak, Ruth Stannard, Patricia Sullivan, Jackie Holt, Sally Shaw. Fourth Row: Helen Ester, Nancy Hoots, Kamala Nemili, Yohio Rink, Fred Martwick. Fifth Row: Scott Richey, Khanh Nguyen, Mark Phillips, Mark Mellison.

Revised *Astrogram* Schedule

Deadline	Publication
Tues., Nov. 14	Fri., Nov. 24
Wed., Nov. 29	Fri., Dec. 8
Wed., Dec. 13	Fri., Dec. 22
Tues., Dec. 26	Fri., Jan. 5
Tues., Jan 9	Fri., Jan. 19
Wed., Jan 24	Fri., Feb.

Astrogram Submissions

When submitting hard copy for articles, please also send materials electronically using Microsoft Word on Macintosh disk or through NASAMail.

NASAMail submission should be addressed to: DHARDING, Attention: Astrogram.

Want Ad forms (ARC 348) can be ordered through Supply and are also available in the Astrogram Office, Building 204, Room 221.

A separate form is needed for each item to be advertised, each time it is to be run.

Technical Services Division Held Annual Picnic

Balloon racers at the Technical Services Division picnic.

The Technical Services Division held its annual picnic recently at Serra park in Sunnyvale. As in the past, everyone had a lot of fun— especially the kids. Besides some great food, there were games for everyone and a raffled dinner for two at the Velvet Turtle, won by Lee Morgan (Code ETM).

COTR's ...

(Continued from Page 3)

Howard Goldstein (l) accepting for Paul Sawko, SueEllen Laurie, Ernest Jennings, Craig McCreight, Peter Friedland, Martha Mishal.(*Not Shown: Louis Stearn.*)

Branch for Space Research; SueEllen J. Laurie, selected by the Purchasing Office; Peter R. Friedland, selected by the University Affairs Branch and Paul M. Sawko was the awardee from the Contract Management Branch for Aerophysics. Mr. Sawko was not able to be present at the ceremony — vacation in Hawaii took precedence — but was represented by his branch chief, Howard Goldstein.

Congratulations to the COTR's of the Year who received a certificate, plaque and special achievement award of $250.

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Equipment is Our Business
Let Us Help You

Mail Stop 227-5
Ext. 4-3829
Zone 5

Buildings Served:
205, 205A, 207,
207A, 214, 215,
216, 216A, 216B,
218, 218A, 218B,
219, 222, 226,
227, 227A, 227B,
227C, 227D, 235,
251, T036, T037,
T320, T948, T018

Vito Parado

Equipment Specialists/Custodians

Mail Stop 240A-3
Ext. 4-3825
Zone 6

Buildings Served:
211, 240, 240A,
242, 248, 248A,
248B, 248C,
248D, 252, 259,
T001, T003,
T016, T020,
T021, T023, T026,
T039, T040, T256,
T260, T272, T417, T420, T663, T921

Kelly James

1. 26-28

22ND ANNUAL SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

DECEMBER 7, 1989

CONTRACT TRANSITION PANEL

TRANSITION TO PAYLOAD GROUND OPERATIONS CONTRACT (PGOC) AT KENNEDY SPACE CENTER

J. BURL GALLOWAY
DIRECTOR, PRODUCTION SUPPORT

BACKGROUND

- O PAYLOAD GROUND OPERATIONS CONTRACT (PGOC) IS THE LAST OF THE THREE MAJOR CONSOLIDATION CONTRACTS AT KENNEDY SPACE CENTER (OTHERS ARE BASE OPERATIONS CONTRACT AND SHUTTLE PROCESSING CONTRACT).

- O COMPETED BY NASA-KSC IN 1986.

- O MDSSC-KSC (THEN MDAC-KSC) AWARDED COST PLUS AWARD FEE CONTRACT EFFECTIVE JANUARY 1, 1987.

- O MDSSC-KSC PREVIOUSLY HAD CONTRACTS FOR INTERIM CARGO INTEGRATION OPERATIONS (ICIO) AND SPACELAB LAUNCH SITE OPERATIONS.

PAYLOAD GROUND OPERATIONS CONTRACT (PGOC)

CONTRACT NAS10-11400

OVERALL RESPONSIBILITY FOR GROUND OPERATIONS RELATING TO NASA-KSC ASSIGNED PAYLOADS. INCLUDES PROCESSING, LOGISTICS SUPPORT, TESTING, TRANSPORTATION, OPTIONAL CUSTOMER SERVICES, EXPERIMENT INTEGRATION SUPPORT, TELEMETRY, INSTRUMENTATION, COMPUTATIONAL SERVICES, SPACE STATION PLANNING AND SUPPORT, MAINTENANCE AND SUSTAINING ENGINEERING OF PAYLOADS ASSOCIATED GROUND SYSTEMS AND FACILITIES.

NEW AREAS OF RESPONSBILITY FOR MDSSC-KSC UNDER PGOC

0 FACILITY SYSTEMS AND EQUIPMENT
0 SUSTAINING ENGINEERING - MODIFICATIONS SUPPORT
0 LOGISTICS PLANNING - SPACE STATION
0 KIMS AND NEMS IMPLEMENTATION AND OPERATIONS
0 OPERATION OF MATERIAL SERVICE CENTERS
0 SERVICE AND MAINTENANCE CONTRACTS
0 MOBILE HEAVY EQUIPMENT
0 TRANSPORTATION MANAGEMENT
0 PACKAGING AND CRATING
0 CLEANING - OPERATIONS AREAS
0 PROCUREMENT AND TECHNICAL TRAINING SUPPORT FOR MAJOR LOCAL SUB-CONTRACTORS (BAMSI AND CSC)
0 CHEMICAL SAMPLING AND ANALYSIS

PGOC TRANSITION PLANNED/IMPLEMENTED

O PGOC ORGANIZATION IN PLACE BEFORE AUTHORITY TO PROCEED

O PLANS AND SCHEDULES READY AT ATP

O SIX TEAMS IDENTIFIED AND IN POSITION AT ATP

O TEAM WORK (NASA/MDSSC/INCUMBENTS)

O TRANSITION AND TURNOVER

- TRANSITION (RESPONSIBILITY AND PERSONNEL)
  FOUR COMPLETED AT ATP, TWO COMPLETED IN 30 DAYS
- TURNOVER (MATERIAL, EQUIPMENT, DOCUMENTATION AND SOFTWARE)
  COMPLETED SIXTEEN WEEKS AFTER ATP

PGOC TRANSITION PLANNED/IMPLEMENTED (CONT)

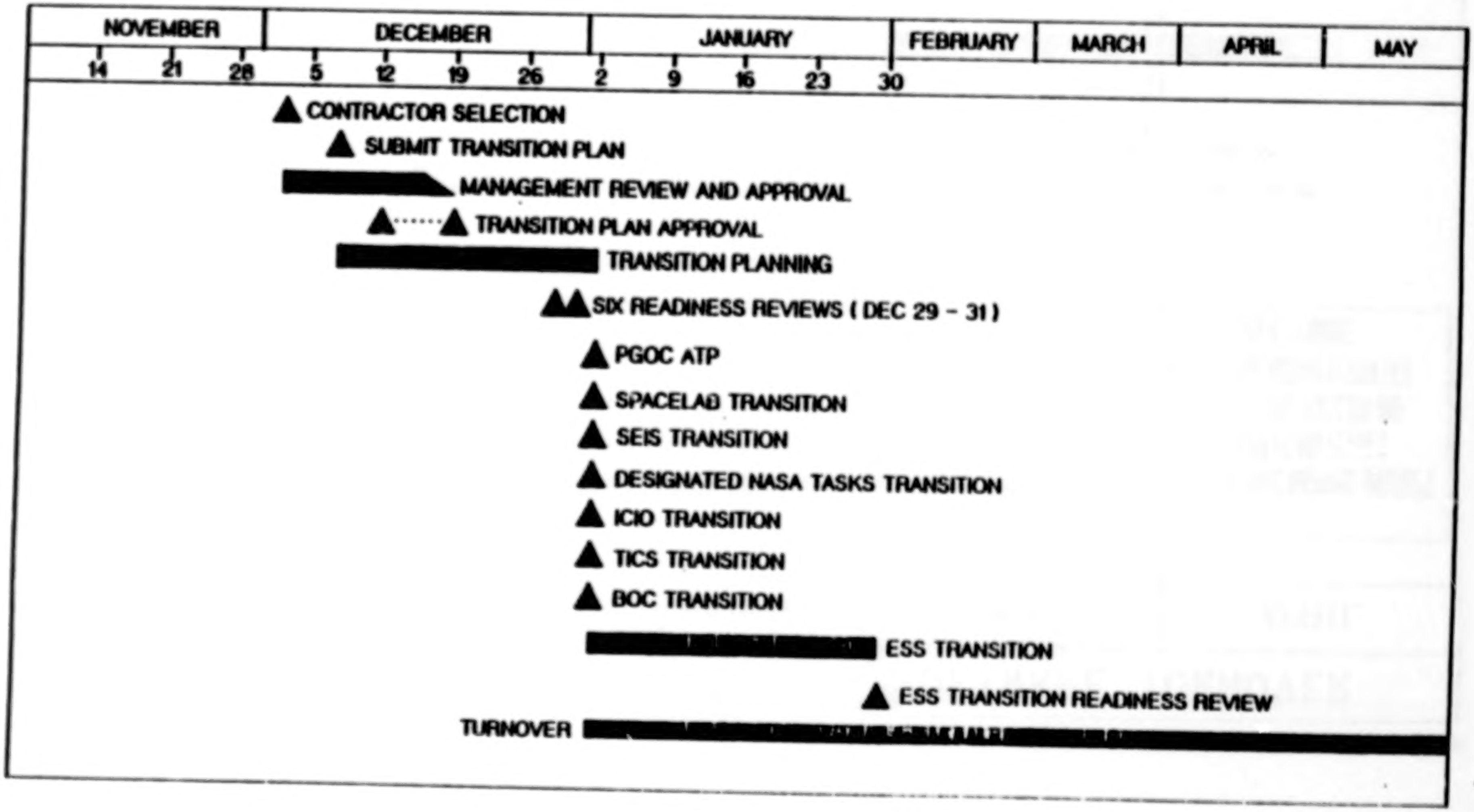
O JOINT ACTIONS ASSIGNED WITH FORMAL FOLLOW-UP

O WEEKLY TEAM PROGRESS REVIEWS CONDUCTED

O MASTER TURNOVER SCHEDULE MAINTAINED

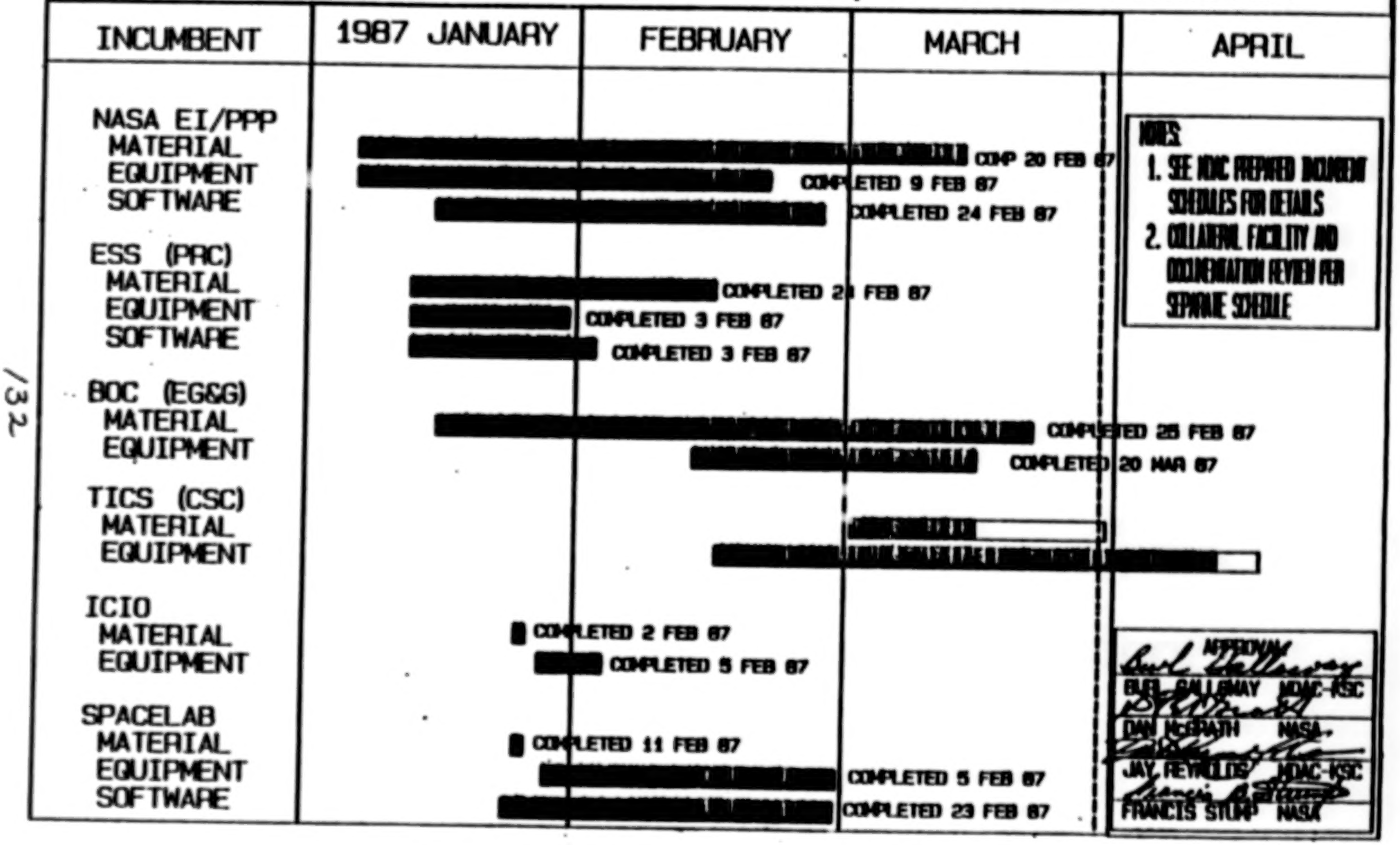
O SMOOTH TRANSITION/TURNOVER ACHIEVED WITH MINIMUM DISRUPTION TO ONGOING ACTIVITIES.

PGOC TRANSITION / TURNOVER SCHEDULE



27 MARCH 1987

CONTROLLED EQUIPMENT/MATERIAL/SOFTWARE TURNOVER



NOTES

1. SEE MDAC PREPARED INCUMBENT SCHEDULES FOR DETAILS
2. COLLATERAL FACILITY AND DOCUMENTATION REVIEW PER SEPARATE SCHEDULE

APPROVAL

Burl Galloway
BURL GALLOWAY MDAC-KSC

DAN McGRATH NASA

JAY REYNOLDS MDAC-KSC

Francis A. Stupp
FRANCIS STUPP NASA

LESSONS LEARNED

O TRANSITION WAS SUCCESSFUL BECAUSE:

- PARTNERSHIP MODE - NASA AND MDSSC
- STABLE ORGANIZATION IN PLACE
- DETAILED PLANS PREPARED
- CLEAR FOCAL POINTS FOR NASA AND MDSSC
- REGULAR JOINT MEETINGS WITH UPDATED SCHEDULES AND ACTION ITEMS

O EMPHASIS ON FACILITY SYSTEMS AND EQUIPMENT

- FOCAL POINTS
- SPARES AND REPAIR PARTS
- DOCUMENTATION

O IMPORTANCE OF TRAINING

- NEW TASKS
- NEW POLICIES AND PROCEDURES
- IMPROVED ON-THE-JOB (OJT) TRAINING

CONTRACT-TO-CONTRACT
TRANSITION PANEL

22nd Annual NASA Supply and Equipment
Management Conference

NASA KENNEDY SPACE CENTER
December 5 - 7, 1989

PANEL MEMBERS

LeRC

Judith M. Stazzone,
Head, Support Operations Office

Craig Wilson,
Project Manager, Cortez

PANEL MEMBERS

ARC

Travis Brown, Chief,
Supply and Transportation Branch

Bennie Opie, Project Manager,
Dryden, Quad-S

PANEL MEMBERS

KSC

Francis B. Stump,
Chief, Payload Support Division

J. Burl Galloway,
Director, Product Support,
McDonnell Douglas Space Systems Co.

NASA LEWIS RESEARCH CENTER

CLASS

Judith M. Stazzone

WHAT HAS LEWIS EXPERIENCED?

- Short lead time between contract signing and start
- Multiple phase-in dates
- Training of Technical Representatives

HOW HAVE WE IMPROVED?

- Phase-in of administrative and clerical option
- Centerwide impact
- Appoint/train monitoring organization
- Funding
- Tours
- Contract/CS management interface

EFFECTIVE

MONITORING

ORGANIZATION

22ND ANNUAL SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

PAYLOAD LOGISTICS TRANSITION
SAME CONTRACTOR--DIFFERENT RESPONSIBILITIES

Presented by:

Francis B. Stump
Chief, Payload Support Division

NASA
John F. Kennedy Space Center

KSC FORM 4 607 (REV. 1/88)

PAYLOAD LOGISTICS SYSTEM TRANSITION

SAME CONTRACTOR - DIFFERENT RESPONSIBILITIES

RESPONSIBILITY EVOLUTION

ORIGINALLY: CENTRALIZED LOGISTICS SYSTEM (1 CONTRACTOR)

INTERIM: DE-CENTRALIZED LOGISTICS SYSTEM (HYBRID) (3 CONTRACTORS)

BASE OPERATIONS CONTRACTOR (BOC)

- OPERATE AND MAINTAIN INVENTORY MANAGEMENT SYSTEMS (KIMS AND NEMS)
- TOTAL BOC LOGISTICS SYSTEM
- SUPPORTED PAYLOAD SUPPORT CONTRACTOR BY:
    - PERFORMING NEW ITEM LOAD
    - PERFORMING CATALOGING
    - PERFORMING USER CONTROL
    - ESTABLISHING AND SERVICING BENCH STOCK
    - MANAGING EQUIPMENT INVENTORY
    - SHIPPING AND RECEIVING
    - PROCURING

SHUTTLE PROCESSING CONTRACTOR (SPC)

- STAND-ALONE LOGISTICS SYSTEM UTILIZING KIMS AND NEMS

NASA
John F. Kennedy Space Center

KSC FORM 4 607 (REV. 1/88)

PAYLOAD LOGISTICS . .TEM TRANSITION

SAME CONTRACTOR - DIFFERENT RESPONSIBILITIES

RESPONSIBILITY EVOLUTION (CONT'D)

PAYLOAD SUPPORT CONTRACTOR

- UTILIZED HAND RECEIPT ACCOUNTS FOR EQUIPMENT MANAGED BY BOC IN NEMS
- REQUESTED CATALOGING AND NEW ITEM LOAD SERVICES FROM BOC
- REQUESTED BENCH STOCK ESTABLISHMENT AND SERVICING FROM BOC
- UTILIZED PARTITION OF KITS TO MANAGE AND ISSUE FLIGHT ITEMS OF INVENTORY
- PARTIAL PROCUREMENT IN HOUSE - PARTIAL BY BOC

PAYLOAD LOGISTICS SYSTEM TRANSITION

SAME CONTRACTOR - DIFFERENT RESPONSIBILITIES

RESPONSIBILITY EVOLUTION (CONT'D)

POST TRANSITION: THREE STAND-ALONE CONTRACTORS

- BOC MANAGE BASE SUPPORT INVENTORY AND OPERATE AND MAINTAIN THE INVENTORY MANAGEMENT SYSTEMS (NEMS, KIMS)
- SPC MANAGE THE SHUTTLE PROCESSING INVENTORY UTILIZING THE CENTER INVENTORY MANAGEMENT RESOURCES (NEMS, KIMS)
- PGOC MANAGE THE PAYLOAD OPERATIONS INVENTORY UTILIZING THE CENTER INVENTORY MANAGEMENT RESOURCES (NEMS, KIMS)

John F. Kennedy Space Center

PAYLOAD LOGISTICS SYSTEM TRANSITION

SAME CONTRACTOR - DIFFERENT RESPONSIBILITIES

SUMMARY OF LESSONS LEARNED

JANUARY 1, 1987: NASA AND MCDONNELL DOUGLAS IMPLEMENTED THE TRANSITION TO THE PGOC STAND-ALONE SYSTEM.

STAND-ALONE SYSTEM INCLUDES:

- 60,000 LINE ITEMS OF SUPPLIES
- 7,200 LINE ITEMS OF EQUIPMENT
- 26 NEW AREAS OF FACILITY AND FACILITY SYSTEMS FOR OPERATIONS AND MAINTENANCE
- ESTABLISHING USER CONTROL
- ESTABLISHING NEW ITEM LOAD AND CATALOGING
- TRANSFERRING NUMEROUS RECORDS AND ASSETS FROM BOC
- SECURING MANY TERMINALS TO ACCESS KIMS AND NEMS
- TRANSPORTATION MANAGEMENT
- SHIPPING AND RECEIVING
- ADDITIONAL WAREHOUSING
- TOTAL PROCUREMENT

PAYLOAD LOGISTICS SYSTEM TRANSITION

SAME CONTRACTOR - DIFFERENT RESPONSIBILITIES

SUMMARY OF LESSONS LEARNED (CONT'D)

POSITIVE PERFORMANCE

PGOC STEPPED UP TO THE RESPONSIBILITIES AND HAS DISCHARGED THEM IN A VERY PROFESSIONAL MANNER THROUGH THE EARLY DEVELOPMENT OF PLANS AND LONG-TERM IMPLEMENTATION.

BOC HAS BEEN VERY RESPONSIVE TO NEEDS AND HAS HELPED IN GETTING THE SYSTEM IN PLACE INCLUDING SUBCONTRACTING TO PGOC FOR SUPPORT.

POTENTIAL ENHANCEMENTS

THE GOVERNMENT ANTICIPATED THE TRANSITION IMPACT, HOWEVER IT COULD HAVE BEEN DECREASED BY:

- HAVING MORE TERMINALS IN PLACE FOR KIMS AND NEMS.
- HAVING A MORE PHASED TRANSITION OF RESPONSIBILITIES.
- ACQUIRING ADDITIONAL ASSETS FOR FACILITY SYSTEMS AND EQUIPMENT FOR TURNOVER TO PGOC.
- MAKING A DETAILED TRANSITION PLAN A PART OF THE SOW AND CONTRACT.

NASA
John F. Kennedy Space Center

KSC FORM 4-607 (REV. 1/88)

SUBJECTS

1. KEY PERSONNEL
2. IDENTIFY TRAINING REQUIREMENTS
3. SAFETY
4. SUPPORT EQUIPMENT

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BE ABLE TO IDENTIFY:

- THE STRUCTURE OF THE ORGANIZATION
- THE OVERALL MISSION
- THE MANNER IN WHICH THE CONTRACTOR CONTRIBUTES TO MISSION ACCOMPLISHMENTS
- THE PEOPLE WHO PERFORM THE TASK

TRAINING SHOULD BE CONDUCTED WITH THE ADOPTION OF:

- POLICIES
- NEW PROCEDURES
- SYSTEMS
- MODIFICATIONS & CHANGES
- PLANS OF OPERATION

CROSS-UTILIZATION

- A QUALIFIED SUBSTITUTE WILL BE AVAILABLE.
- ASSURES THAT ALL REQUIRED FUNCTIONS WILL BE PEFORMED.
- PREPARE PERSONNEL FOR DIFFICULT, RESPONSIBLE OR COMPLICATED JOBS.

BASIC SAFETY PROCEDURES

- MAINTAIN A SAFE WORKPLACE.
- ENCOURAGE EMPLOYEES TO REPORT HAZARDS.
- OFFICES & PLANTS SHOULD BE CLEAN, WELL DESIGNED, AND CONTROLLED FOR NOISE, HEAT, DUST AND FUMES.
- PLANTS NEED GOOD PREVENTATIVE MAINTENANCE PROGRAMS FOR PRODUCTION EQUIPMENT.
- INSPECT MONTHLY OR QUARTERLY.
- SAFETY AUDITS SHOULD BE COMPLETED ANNUALLY.
- BASE SAFETY TRAINING ON SPECIFIC HAZARD INFORMATION.
- MAKE REFRESHER SAFETY TRAINING AVAILABLE ON A CONTINUING BASIS FOR ALL EMPLOYEES INCLUDING SUPERVISORS.

SUPPORT EQUIPMENT

- OFFICE
- VEHICLES
- MATERIAL HANDLING
- AUTOMATIC DATA PROCESSING

SUPPLY WORKSHOP

Data Base Administrator Workshop

- **The Data Base Administrator Workshop will cover the following topics:**
  - **Data & File Conversion (*GENERAL*)**
  - **Test Files/Production Files**
  - **Install Materials & Processes, e.g., PREDICT**
  - **DASD Requirements**
  - **Security - Application & ADABAS Security by Value**
  - **Hardware/Software Environment**
  - **Open Discussions**

NASA
SUPPLY
MANAGEMENT
SYSTEM

System Administrator Workshop -
Installation & Training

- Installation
  - Load NSMS application software
  - Load NSMS training data base
  - Validate NSMS
  - Training
  - MSFC (alpha test)/ ARC Moffett (beta test)
    - Testing as per NSMS Test Plan and Procedures, AIM-NSMS-DID-18
  - Site data conversion
  - Site acceptance testing as per Site Test Plan and Procedures

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SUPPLY
MANAGEMENT
SYSTEM

System Administrator Workshop -
Site Specifics

- User Exits Strategy (*what it can do*)
  - How User Exits Fit Into The NSMS Transaction Scheme
  - Transaction Accounting Information
    - How to customize on-line accounting information
    - How accounting information is stored
  - Pre-commit User Exit
    - Possible uses
  - Post-commit User Exit
    - Possible uses

System Administrator Workshop -
Special Features

- Pop-up Windows
- On-line Help Text
- Bar Coding Capability

System Administrator Workshop -
Menu Structure/Customization

- How To Customize A Menu
    - Moving/adding/removing selections

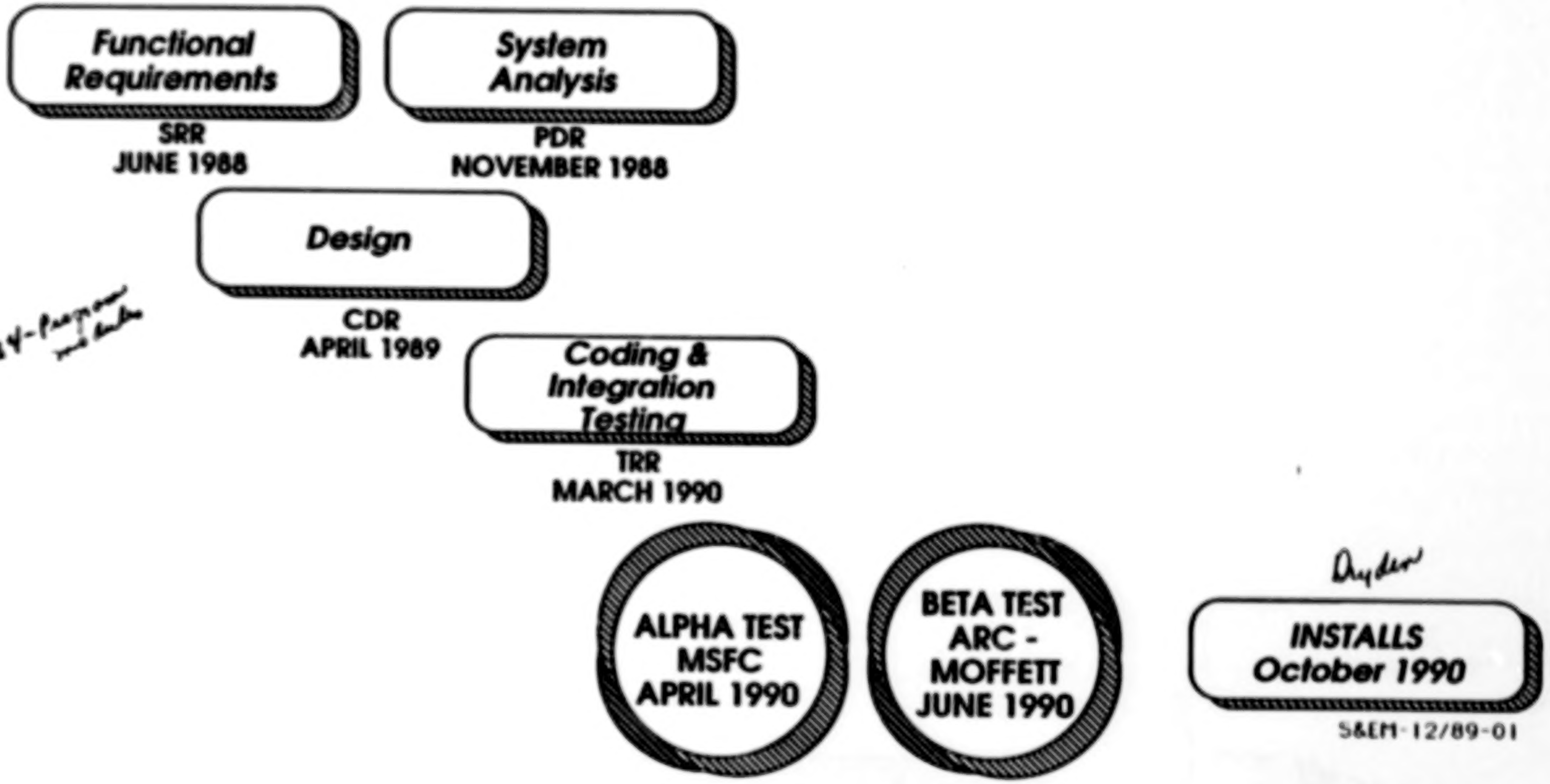
NSMS General Status Workshop

- The General Status Workshop will cover the following topics:
  - NSMS Development Status
  - Special Features
  - Installation & Training

NASA
SUPPLY
MANAGEMENT
SYSTEM

NSMS General Status Workshop

Bonnie Hawkins



Functional Requirements

SRR
JUNE 1988

System Analysis

PDR
NOVEMBER 1988

Design

CDR
APRIL 1989

Coding & Integration Testing

TRR
MARCH 1990

ALPHA TEST
MSFC
APRIL 1990

BETA TEST
ARC -
MOFFETT
JUNE 1990

Dryden

INSTALLS
October 1990

163

234-Program [illegible]

S&EM-12/89-01

NASA
SUPPLY
MANAGEMENT
SYSTEM

S&EM - NSMS Technical Workshop
December 5, 1989

General Status Workshop - Special Features: [illegible] developments

Jane Balance

- Pop-up Windows
- On-line Help Text
- Menu Customization

I PUC controlling factors.

[illegible]

S&EM - NSMS Technical Workshop
December 5, 1989

NASA
SUPPLY
MANAGEMENT
SYSTEM

General Status Workshop - Installation & Training

S. Chapman

- **Site Installation Plan**
  - Follows generic Site Installation Plan, AIM-NSMS-DID-21
  - Due 120 days prior to scheduled installation
- **Site Preinstallation Visit**
  - Approx 30 days prior to scheduled installation
  - Verification of site readiness
    - Hardware and software platform
    - Training facilities and equipment
    - Training requirements
    - Participating personnel identified

NASA
SUPPLY
MANAGEMENT
SYSTEM

General Status Workshop -
Installation & Training

- Installation
  - Load NSMS application software
  - Load NSMS training data base
  - Validate NSMS
  - Training
  - MSFC (alpha test)/ ARC Moffett (beta test)
    - Testing as per NSMS Test Plan and Procedures, AIM-NSMS-DID-18
  - Site data conversion
  - Site acceptance testing as per Site Test Plan and Procedures

Lead Programmer Workshop

- The Lead Programmer Workshop will cover the following topics:
  - Site Specifics
  - Technical Aspects of NSMS
    - Security
    - Menu Structure & Customization
    - Special Features
  - Data File Conversion
  - Open Discussions

Lead Programmer Workshop - Site Specifics

- User Exits
  - How User Exits Fit Into The NSMS Transaction Scheme
  - Pre-commit User Exit
    - Possible uses
    - Rules for pre-commit user exit
  - Post-commit User Exit
    - Possible uses
    - Transaction notification scheme
    - Rules for post-commit user exit

Lead Programmer Workshop -
Site Specifics

- Code Customization/Generation
  - Rules for adding local transactions
  - Naming standards for fields, files, and transactions

NASA
SUPPLY
MANAGEMENT
SYSTEM

Lead Programmer Workshop - Technical Aspects of NSMS

- Security
  - Application
  - ADABAS
- Menu Structure/Customization
- Special Features
  - Standards

Lead Programmer Workshop - Data File Conversion

- NSMS Data Loaders
- Required Loading Sequence
- Data Loader Edits (*what they look for*)

System Administrator Workshop

- The System Administrator Workshop will cover the following topics:
  - Installation & Training
  - Security
  - Menu Structure & Customization
  - Special Features
  - Site Specifics
  - Open Discussions

System Administrator Workshop -
Installation & Training

- Site Installation Plan
  - Follows generic Site Installation Plan, AIM-NSMS-DID-21
  - Due 120 days prior to scheduled installation
- Site Preinstallation Visit
  - Approx 30 days prior to scheduled installation
  - Verification of site readiness
    - Hardware and software platform
    - Training facilities and equipment
    - Training requirements
    - Participating personnel identified

NASA
SUPPLY
MANAGEMENT
SYSTEM

DEFENSE LOGISTICS SERVICES CENTER
(DLSC)

PRODUCTS AND SERVICES

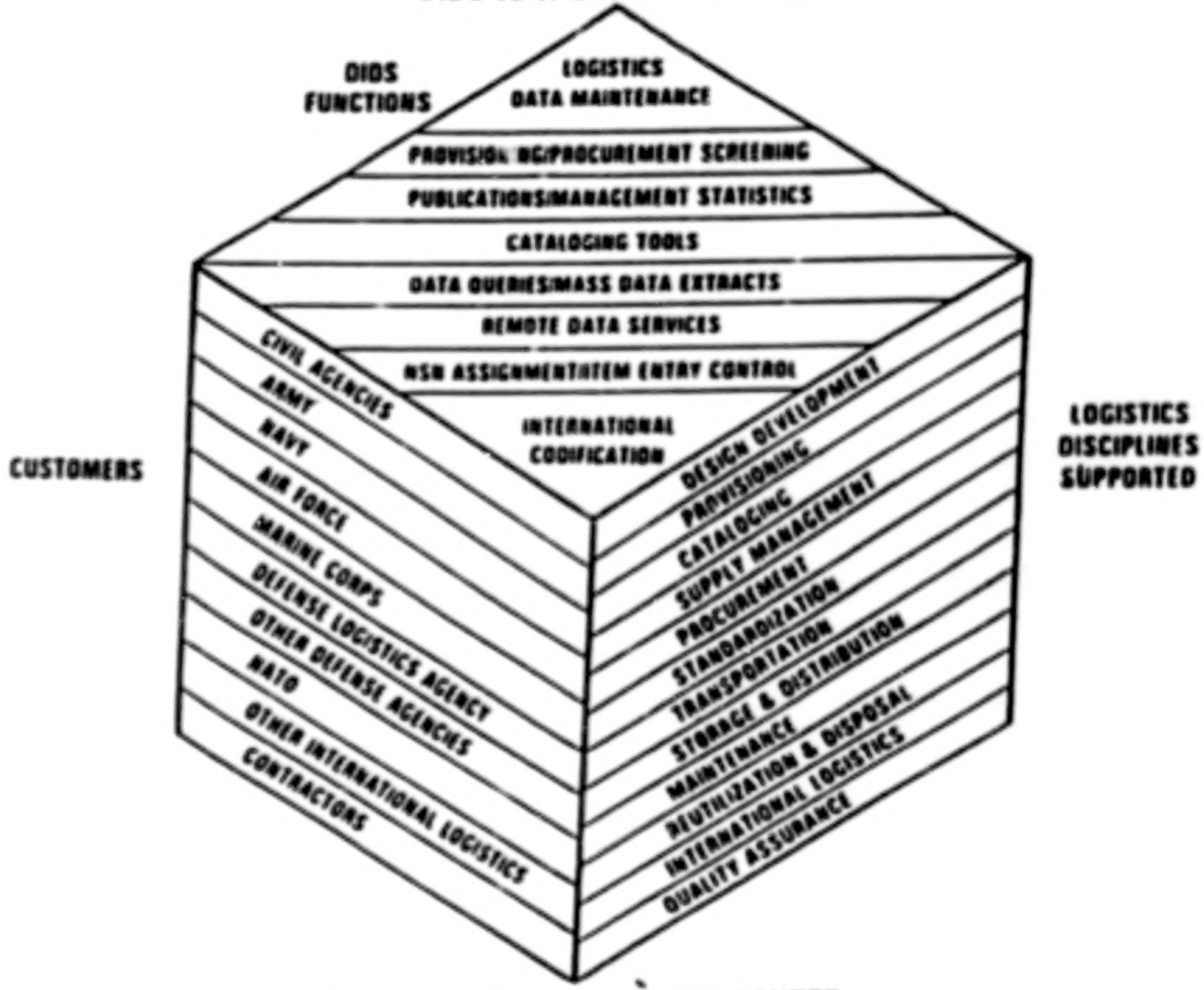
Briefer: Marjorie Lanko

DLSC

- Responsible for Federal Catalog System
- Develop and maintain Defense Integrated Data System (DIDS)
- Disseminate Logistics Management Information

DLSC/DIDS

DIDS IS A CAPITAL SYSTEM



DIDS FUNCTIONS

- LOGISTICS DATA MAINTENANCE
- PROVISIONING/PROCUREMENT SCREENING
- PUBLICATIONS/MANAGEMENT STATISTICS
- CATALOGING TOOLS
- DATA QUERIES/MASS DATA EXTRACTS
- REMOTE DATA SERVICES
- NSN ASSIGNMENT/ITEM ENTRY CONTROL
- INTERNATIONAL CODIFICATION

CUSTOMERS

- CIVIL AGENCIES
- ARMY
- NAVY
- AIR FORCE
- MARINE CORPS
- DEFENSE LOGISTICS AGENCY
- OTHER DEFENSE AGENCIES
- NATO
- OTHER INTERNATIONAL LOGISTICS
- CONTRACTORS

LOGISTICS DISCIPLINES SUPPORTED

- DESIGN DEVELOPMENT
- PROVISIONING
- CATALOGING
- SUPPLY MANAGEMENT
- PROCUREMENT
- STANDARDIZATION
- TRANSPORTATION
- STORAGE & DISTRIBUTION
- MAINTENANCE
- REUTILIZATION & DISPOSAL
- INTERNATIONAL LOGISTICS
- QUALITY ASSURANCE

DLSC IS A CAPITAL VICE CENTER

DLSC GOAL I

Ensure Appropriate Distribution of Products and Services Necessary to Meet Weapon System Readiness and Sustainability Needs.

DLSC GOAL II

Make the Best Use of Technology to Deliver the Needed Products and Services

--Modernization
--LOGRUN
--FED LOG
--CBT

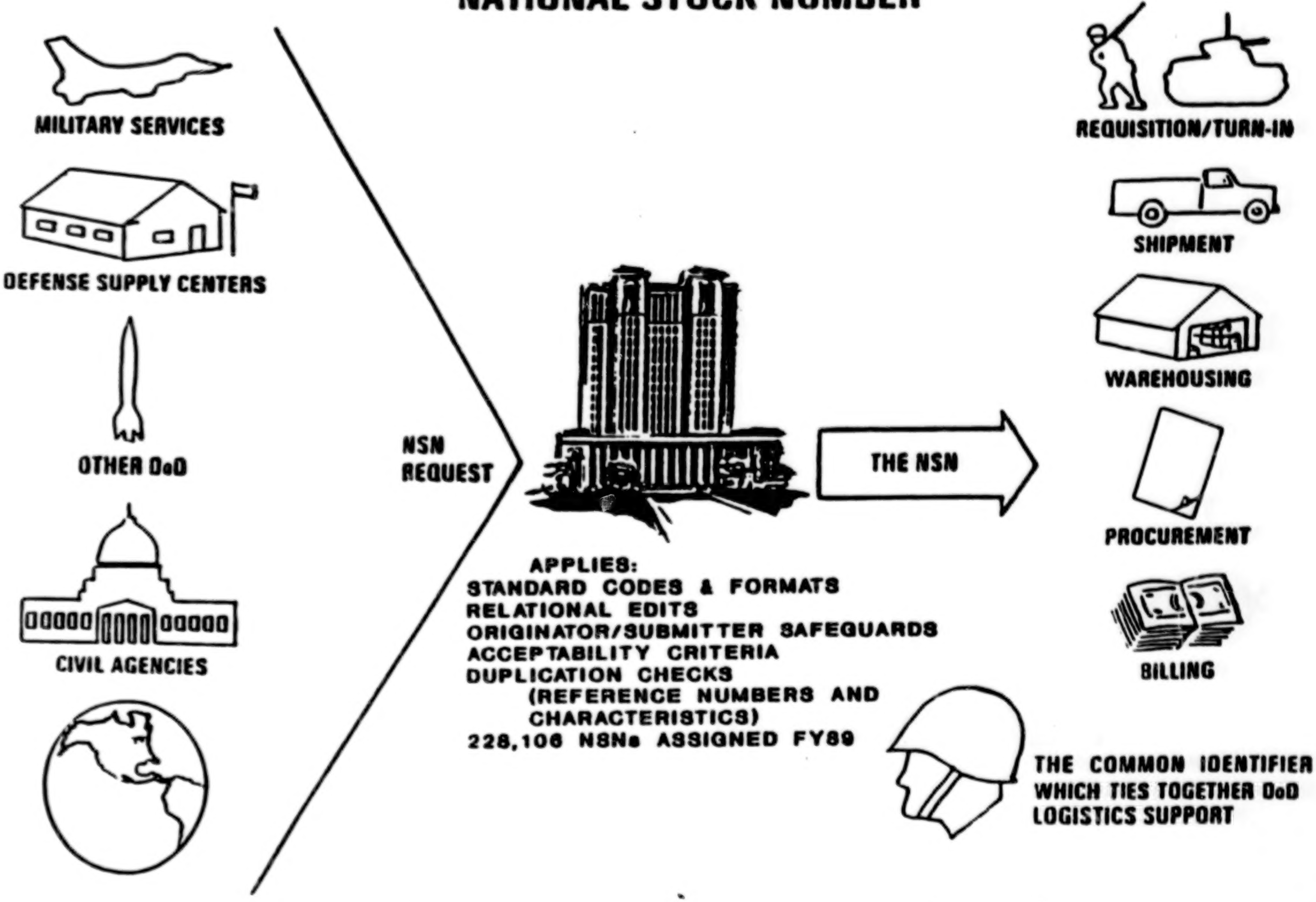
DLSC DATA BASE INFORMATION

- Approximately 6 1/2 Million National Stock Numbers

    -- Item Identification
    -- Item Managers/Users
    -- Manufacturer/Part Numbers
    -- Interchangeability/Substitutability
    -- Freight
    -- Management (Unit Price, Source of Supply)
    -- Characteristics (Description)

MAINTAINING THE INFORMATION RESOURCE

NATIONAL STOCK NUMBER



MILITARY SERVICES

DEFENSE SUPPLY CENTERS

OTHER DoD

CIVIL AGENCIES

NSN REQUEST

THE NSN

APPLIES:
STANDARD CODES & FORMATS
RELATIONAL EDITS
ORIGINATOR/SUBMITTER SAFEGUARDS
ACCEPTABILITY CRITERIA
DUPLICATION CHECKS
(REFERENCE NUMBERS AND CHARACTERISTICS)
228,106 NSNs ASSIGNED FY89

REQUISITION/TURN-IN

SHIPMENT

WAREHOUSING

PROCUREMENT

BILLING

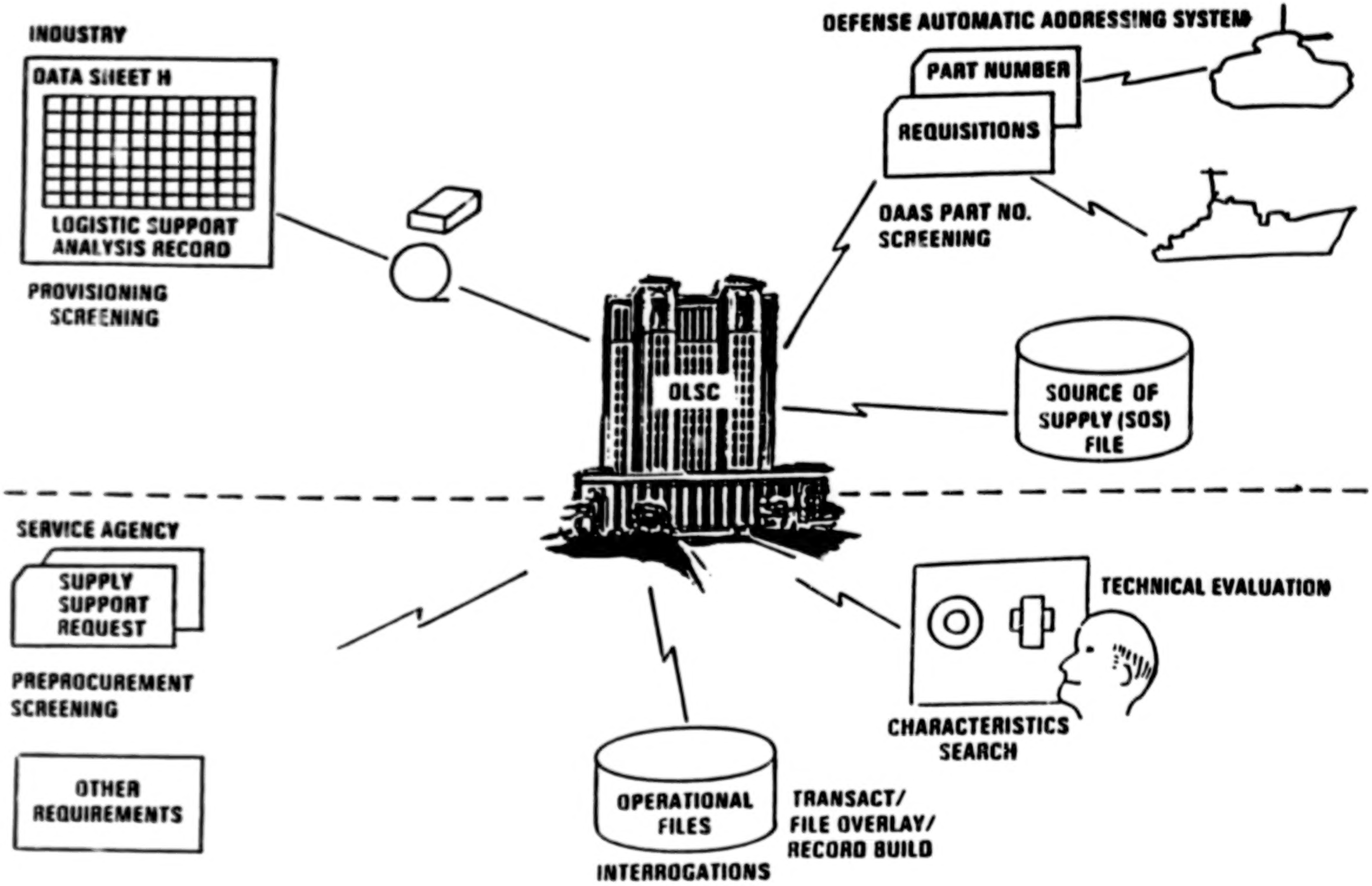
THE COMMON IDENTIFIER
WHICH TIES TOGETHER DoD
LOGISTICS SUPPORT

INFORMATION DISSEMENATION

- NIIN/REFERENCE NUMBER/ CHARACTERISTIC QUERIES
- LOGRUN
- FED LOG
- MEDALS
- PUBLICATIONS
- MASS DATA RETRIEVAL/AUTOMATED TABULAR STUDY LIST

INFORMATION ACCESS

NIIN/REFERENCE NUMBER/CHARACTERISTIC QUERIES


INDUSTRY
DATA SHEET H
LOGISTIC SUPPORT ANALYSIS RECORD
PROVISIONING SCREENING
DEFENSE AUTOMATIC ADDRESSING SYSTEM
PART NUMBER
REQUISITIONS
DAAS PART NO. SCREENING
OLSC
SOURCE OF SUPPLY (SOS) FILE
SERVICE AGENCY
SUPPLY SUPPORT REQUEST
PREPROCUREMENT SCREENING
OTHER REQUIREMENTS
OPERATIONAL FILES
INTERROGATIONS
TRANSACT/ FILE OVERLAY/ RECORD BUILD
CHARACTERISTICS SEARCH
TECHNICAL EVALUATION

LOGISTICS REMOTE USERS NETWORK
LOGRUN

- Designed to Provide Immediate, On-line Access to DIDS and other Logistics Information

- Currently Supports Over 1231 Access

- Uses Defense Logistics Agency Teleprocessing Network (DLANET)

- Connectivity call:
  DLSC-JCB
  AV932-7409 FTS552-7409
  Commercial (616)961-7409

LOGISTICS REMOTE USERS NETWORK
LOGRUN

- Inquiry
- Characteristic Search
- FSC/FSG/INC
- Depot Maintenance
  (limited
- MEDALS
- CAGE
- Specialized Data Base

FEDERAL LOGISTICS DATA ON COMPACT DISC

FED LOG

- Contains Logistics Information found in 7 Publications
- Service Unique Data-Army/Air Force/Navy
- 250 Prototype sets
- Acquisition Projected August 1990

RFF - Nov

MILITARY ENGINEERING DATA ASSETS LOCATOR SYSTEM

MEDALS

- Implemented October 1988
- Index of Technical Data
- Locate sources of Technical Data
  - 11,821,361 Drawing Numbers/Data Assets
  - 1,366,633 NIINs
  - 15,056,076 Part Numbers
- Equipment - Remote Terminal and/or Computer to Computer Links
- 27 DoD Repositories → ? LOG-LAN
- Locates Technical Data in Seconds

PUBLICATIONS

- Master Cross Reference List (MCRL)
  - -Reference Numbers/NSNs
- Management List (ML-C)
  - -Unit Price, Source of Supply
- Identification List (IL)
  - -Descriptive Data
- Federal Item Logistics Data Record (FILDR)
  - -Descriptive Data
- 346 Million Microfiche
- Over 50,000 Customers

DATA EXTRACT

- Mass Data Retrieval (MDR)
- Automated Tabular Study List (ATSL) [illegible]

TRAINING

- In-house DLSC
- Customer's Site
- Computer Based Training (CBT)
- Private Sector
- Foreign Governments

COMPUTER BASED TRAINING

- Used on IBM Compatible Personal Computer
- Easy Access
- Cost Effective - not
- No Classroom Requirements
- CBTs Developed
  - --LOGRUN
  - --MEDALS
  - --FED LOG
  - --NSN Development
  - --Introduction to FCS

MODERNIZATION

- On-Line File Update
- Tailored Publications
- Quicker SCR Processing
- Ad Hoc Query
  - --MDR - off-line
- DIDS Procedures - manual on-line
  - --On-Line
  - --CD-ROM
- Flexible
- Fast Response

CUSTOMER SUPPORT

INFORMATION MUST BE:

- TIMELY
- USABLE
- FLEXIBLE
- ACCESSIBLE
- ACCURATE

CUSTOMER SUPPORT
GOVERNMENT ACTIVITIES

- CUSTOMER SERVICE OFFICE
  AUTOVON 932-4725
  FTS 552-4725
  COMMERCIAL 616-961-4725
  DDN ~~E~~-MAIL dlscjbd%dlscg2.uucpedsac.dla.mil ✓
  FAX 932-4265

- INFORMATION PACKAGES ✓ acquisition of CBT's also!
  AUTOVON 932-4676
  FTS 552-4676
  COMMERCIAL 616-961-4676
  E-MAIL/FAX (same as above)

CUSTOMER SUPPORT
PRIVATE SECTOR/Contractors

- FREEDOM OF INFORMATION
  OFFICE
  COMMERCIAL 616-961-4955
  FAX 616-961-4265

- INFORMATION PACKAGES
  (same as above)

DEFENSE LOGISTICS SERVICES CENTER
(DLSC)

MODERNIZATION

Briefer: Marjorie Lanko

PURPOSE

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To Provide Information on the
DLSC Systems Modernization
Effort and the Improvements in
Logistics Support it will Provide
to the Logistics Community

OVERVIEW

- Background
- Approach/Strategy
- Benefits
- Current status

NEED TO MODERNIZE

RATIONALE

- Responsibility
    - Maintain operational status
    - Implement new functions
- Substantial evaluation of:
    - Automated information system (AIS)
    - Customer satisfaction
    - Future requirements

CURRENT DEFICIENCIES

- Capacity exhaustion (FY89)
- Inflexible data base & software
- Nonresponsive
  - System changes
  - DoD logistic changes
- Continuity of operations

CONSEQUENCES

- Inability to:
    - Provide timely access
    - Provide integrated solutions
    - Add new functions
    - Provide continuity of operations
- Growth of duplicate items in inventory

OBJECTIVES

- Support customer requirements
- Increase productivity
- Eliminate deficiencies
- Preclude capacity shortfall
- Improve data quality

USER
REQUIREMENTS

User Requirements!

- Integrate with user data bases
- Expand/enhance data access
- Increase flexibility
- Tailored data extracts
- On--Line updates
- Uninterruptable system

TRANSITION STRATEGY

SOFTWARE IMPLEMENTATION PLAN

CA ▸	CA + 9 MOS. ▸	INC. 1+3 MOS. ▸	INC. 2+6 MOS. ▸	INC. 3+6 MOS. ▸
	INCREMENT 1	INCREMENT 2	INCREMENT 3	INCREMENT 4
VENDOR	SYSTEM SOFTWARE DBMS ON-LINE SYSTEMS	MANAGEMENT STATISTICS INFORMATION DISSEMINATION	DATA RETRIEVAL	DRAWING CROSS-REFERENCE
DLSC			MEDALS CHAR. DATA MANAGEMENT	MANAGEMENT OF DATA BASE NATO CATALOGING TOOLS

BENEFITS

- Improved responsiveness to user
- Improved NSN match rate
- Cataloger efficiency
- Publications
- Packaging segment
- Medals enhancements

PROGRAM MILESTONES
AND
SCHEDULE

MILESTONE	APPROVED SCHEDULE	COMPLETED
ACQUISITION		
REVISE RFP	APR 88	SEP 88
DLA REVIEW	OCT 88	OCT 88
RELEASE RFP	NOV 88	NOV 88
CONTRACT AWARD	FEB 90	
INITIAL INSTALLATION	JUL 90	
DEVELOPMENT		
FUNCTIONAL DESCRIPTION	APR 88	AUG 88
SYSTEM SPECS	JAN 91	
PROGRAMS	SEP 91	
TESTING ACTIVITIES	OCT 91	
FULL IMPLEMENTATION	MAR 92	
FUNC. PROGRAM REVIEW	JUN 92	

SUMMARY

- Why DLSC needs to modernize
- Objectives to be realized
- Functional user requirements
- Aggressive acquisition strategy
- Incremental transition strategy
- Benefits to be realized
- Current status

BAR CODE PRESENTATION

EG&G FLORIDA, INC.

PRESENTERS:
M. BLANTON
G. KNIGHTON
L. BLOCKER

OVERVIEW

- KENNEDY INVENTORY MANAGEMENT SYSTEM
- BAR CODING CONSIDERATIONS
- WHERE WE'VE BEEN, ARE, AND ARE GOING
  - HARDWARE
  - SOFTWARE

2/8/97

KENNEDY INVENTORY MANAGEMENT SYSTEMS (KIMS)

- Three Contractors
- Four Accounts
- Six Hundred People
- 345,000 Line Items
- 900+ Programs
- 555,000 Lines of Code

WHY BAR CODE?

- Accurracy
- Speed
- Economy
- Versatility

220 499

BAR CODING IN KIMS

- PAST -

- October 1988 — Established Bar Code Working Group
- November 1988 to May 1989 — High Level Functional Requirements in Ten Specific Areas of operation

BAR CODING IN KIMS

- PRESENT -

- Hardware Acquisition Plan
- Request for Proposal (RFP)

BAR CODING IN KIMS

- FUTURE -

Bench Stock	JUN '90
Tools/Garments	JUN '90
Inventory	JUL '90
Receiving	NOV '91
Warehouse Operations	NOV '91
MOD Kits	NOV '91
Containers	NOV '91
Catalogs	NOV '91
Transportation	DEC '91
Procurement	JAN '92

BAR CODE HARDWARE REQUIREMENTS

- ***BAR CODE HARDWARE REQUIRED TO:***
    - **Produce bar coded data sources**
    - **Provide for Bar Code scanning**

- ***BAR CODED DATA SOURCE REQUIREMENTS:***
    - **Labels**
    - **Management reports**
    - **Menu books of high use data**
    - **Transaction documents**

BAR CODE HARDWARE REQUIREMENTS (cont)

- ***DATA SOURCE PRODUCTION CONSIDERATIONS:***
  - **Data sources that must be produced on KIMS**
  - **Data sources that could be produced outside KIMS**
  - **KIMS data is not static**
  - **Cost of vendor production as compared to onsite vendor costs**

BAR CODE HARDWARE REQUIREMENTS (cont)

- ***CURRENT KIMS HARDWARE:***
  - **System printers**
  - **Workstation printers**

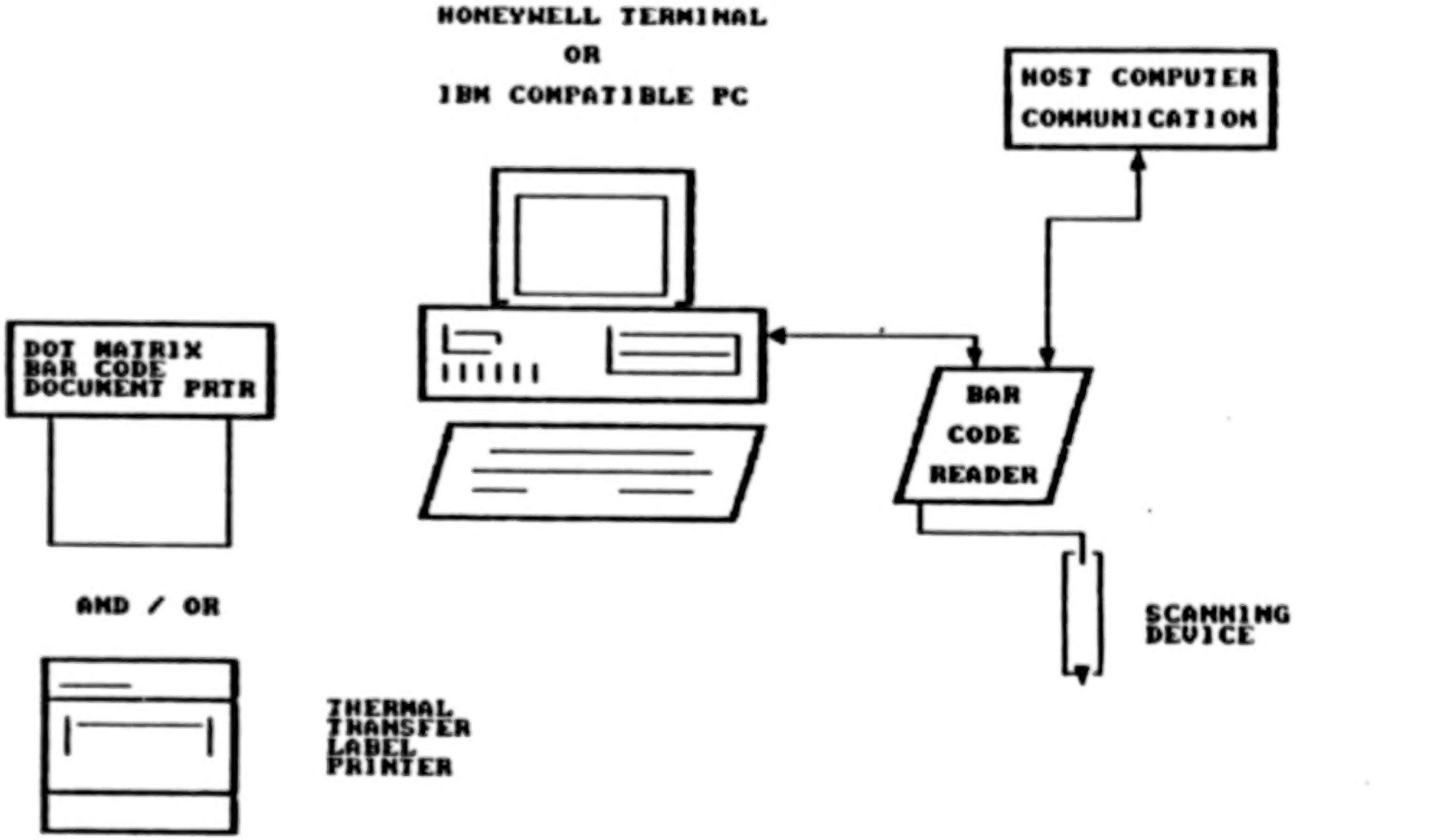
- ***DATA SOURCE PRODUCTION SOLUTIONS:***
  - **Utilize Xerox Laser printers**
  - **Replace existing receive only printers**
  - **Procure Thermal transfer label printers**
  - **Procure Serialized tool labels from a vendor**

BAR CODE HARDWARE REQUIREMENTS (cont)

- ***BAR CODE SCANNING:***
  - **Two types of input devices:**
    - **Digital Wand (pen)**
    - **Helium Neon Laser Scanner**
  - **Two types of environment:**
    - **Fixed Workstation (non-portable)**
    - **Portable**

BAR CODE HARDWARE REQUIREMENTS (cont)

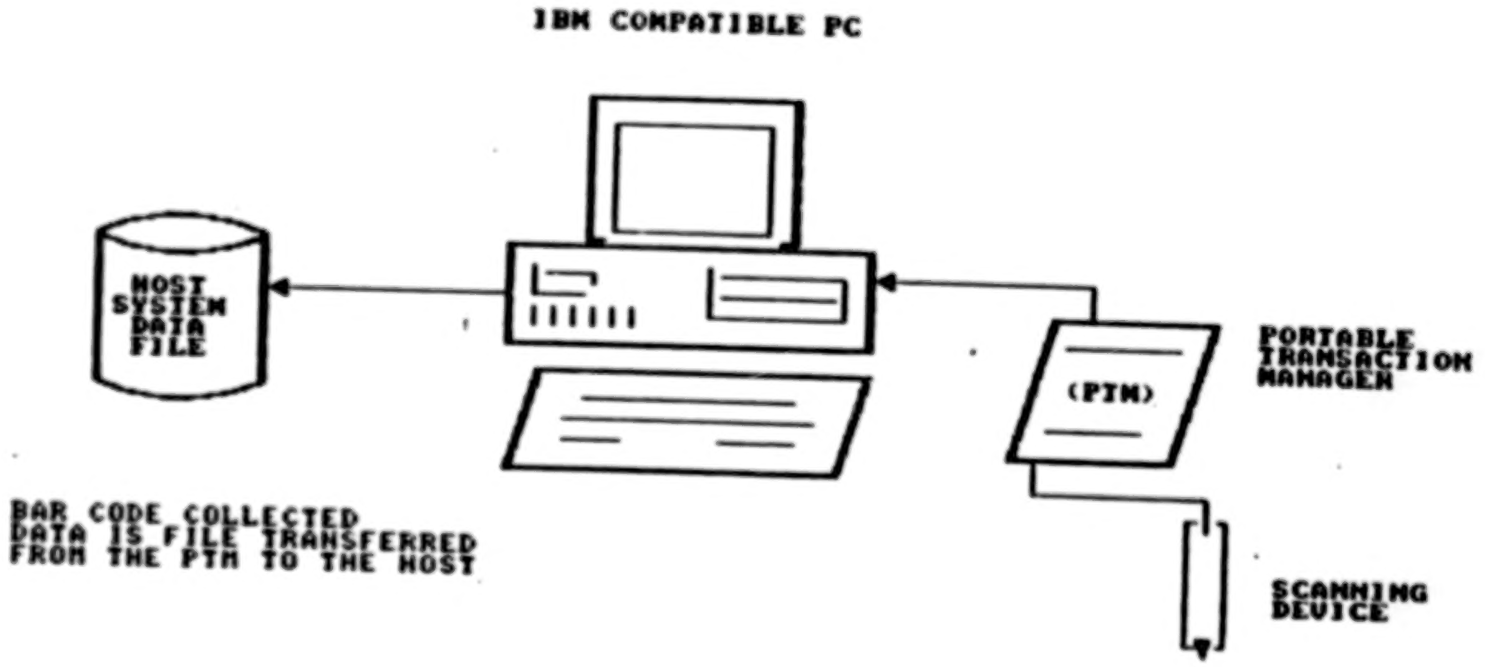
- *FIXED WORKSTATION (Non-Portable) ENVIRONMENT:*
  - Honeywell terminal or IBM Compatible PC
  - Three Non-Portable bar code hardware configurations
  - Replace keystroke entry with bar code scanning
  - Data sources that will be scanned


HONEYWELL TERMINAL
OR
IBM COMPATIBLE PC
HOST COMPUTER COMMUNICATION
DOT MATRIX BAR CODE DOCUMENT PRTR
BAR CODE READER
AND / OR
SCANNING DEVICE
THERMAL TRANSFER LABEL PRINTER

FIXED WORKSTATION

BAR CODE HARDWARE REQUIREMENTS (cont)

- ***BAR CODE DATA COLLECTION (Portable) ENVIRONMENT:***
  - **Two Portable (programmable Portable Transaction Manager (PTM)) configurations**
  - **Applications programs for the PTM**
  - **Data sources that will be scanned**
  - **Portable data collection PC environment**

IBM COMPATIBLE PC
HOST SYSTEM DATA FILE
(PTM)
PORTABLE TRANSACTION MANAGER
SCANNING DEVICE
BAR CODE COLLECTED DATA IS FILE TRANSFERRED FROM THE PTM TO THE HOST

PORTABLE

BAR CODE HARDWARE REQUIREMENTS
BY CONFIGURATION

CONFIGURATION:	**QUANTITY**
Non-Portable with a Digital Wand	111
Non-Portable with a Scanner	43
Magnetic Stripe/Bar Code with a Digital Wand	21
Portable with a Digital Wand	35
Portable with a Scanner	50
PRINTERS:	
Document Printers	107
Thermal Transfer Label Printers	7

BAR CODE HARDWARE COST

YEAR	COST
1990	$206,000.
1991	420,000.
1992	73,000.

TOTAL:	$699,000.

SOFTWARE DEVELOPMENT

- All software development by KIMS Development Group
- Three categories of software development required:
  - Mainframe software
  - PC environment
  - PTM applications software

KIMS BAR CODING PROJECT

FUNCTION	HOURS
BENCH STOCK	330
TOOLS/GARMENTS	140
INVENTORY	230
RECEIVING	1350
WAREHOUSE OPERATIONS	165
MOD KITS	165
CONTAINERS	165
CATALOGS	165
TRANSPORTATION	265
PROCUREMENT	230

NASA SUPPLY MANAGEMENT SYSTEM (NSMS)

Survey results on the Integration of Bar Code Technology

Pat Waye
Marshall Space Flight Center

AREAS TO BE COVERED

- Committee makeup
- Adaptability to Bar Code Technology
- Priorities and sequence of implementation
- Equipment Specifications
- Conclusion and recommendations

COMMITTEE MAKEUP

Ames Research Center

Goddard Space Flight Center

Marshall Space Flight Center

Boeing Computer Support Services

ADAPTABILITY
CRITERIA

- Need for accuracy and reliability
- Need for increased data entry speed
- Data is repetitive
- Functions are standardized
- No extreme environmental conditions exist

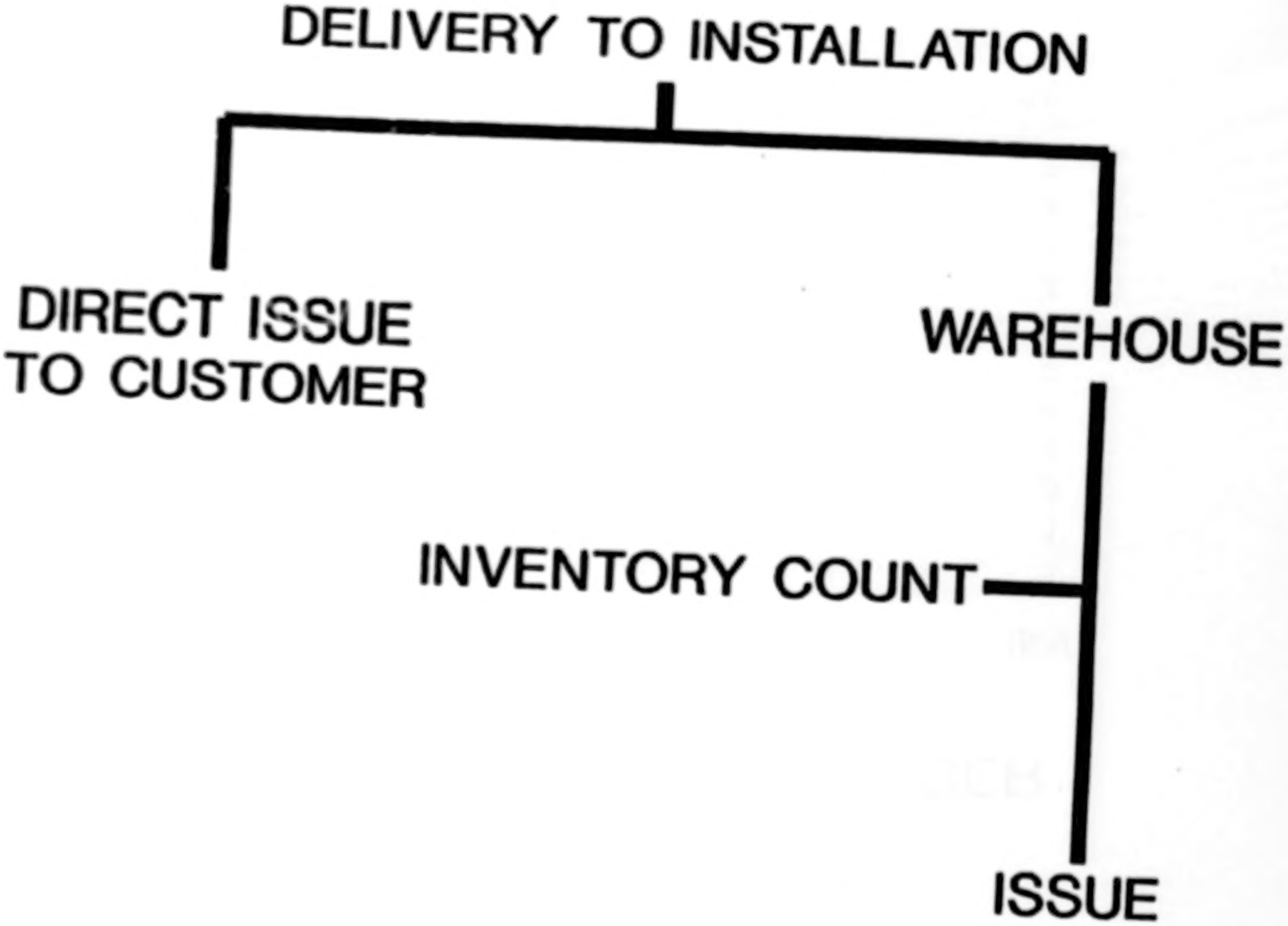
FUNCTIONS IDENTIFIED
FOR STUDY

- Receiving
- Warehousing
- Inventory counting
- Issuing

PRIORITIES
IMPLEMENTATION ORDER

INSTALLATION	REC	ISS	WHSE	INV
AMRC	2	4	3	1
ADRC	3	4	2	1
GSFC	1	2	4	3
JPL	1	2	3	4
JSC	1	2	3	4
KSC	1	3	4	2
LARC	1	4	3	2
LERC	1	2	3	4
MSFC	2	3	4	1
SSC	2	1	3	4
WSTF	4	1	3	2
TOTAL	19	28	35	28

NSMS BAR CODE SURVEY



DELIVERY TO INSTALLATION

DIRECT ISSUE
TO CUSTOMER

WAREHOUSE

INVENTORY COUNT

ISSUE

EQUIPMENT SPECIFICATIONS

- GSFC MAY BE USED FOR FURTHER DEFINITION OF BASELINE REQUIREMENTS.
- INVESTIGATIONS ON EACH INSTALLATION'S PHYSICAL LAYOUT IS NEEDED BEFORE ANY SPECIFIC RECOMMENDATIONS ARE MADE.
- BAR CODING EQUIP. MUST BE COMPATIBLE WITH CODE 39. THIS IS THE AGENCY STANDARD AS DEFINED BY THE AIM PROJECT OFFICE.

CONCLUSIONS

- ALL FUNCTIONS ARE CANDIDATES
- DETAILED ANALYSIS NEEDED FOR DETAILED DESIGN SPECIFICATIONS
- TIME PHASED INTEGRATION
- ORDER OF INTEGRATION
  (1)RECEIVING
  (2)WAREHOUSING/INVENTORY COUNTS
  (3)ISSUING

NSMS BAR CODE SURVEY

RECOMMENDATIONS

- DEVELOP AN OVERALL PLAN FOR TIME PHASING THE IMPLEMENTATION OF BAR CODE TECHNOLOGY INTO THE NSMS FOR THE FOUR FUNCTIONAL AREAS SURVEYED.

- PROVIDE FOR ADDITIONAL CONSULTING SERVICES TO INDEPENDENTLY DEVELOP DETAILED PLANS AND SPECIFICATIONS FOR BOTH SOFTWARE AND HARDWARE.

RECOMMENDATIONS/CONT

- PROCEED WITH A TIME-PHASE DEVELOPMENT OF A COMPREHENSIVE BAR CODING SYSTEM BASED ON THOSE DETAILED PLANS AND SPECIFICATIONS.

- SELECT STANDARD BAR CODE PRINTING DEVICES TO BE PURCHASED FOR THE NSMS APPLICATIONS.

WHAT'S NEXT???

THIS SURVEY WILL BE TURNED OVER TO THE NSMS CCB TO IMPLEMENT ANY OR ALL RECOMMENDATIONS THEY FEEL NECESSARY.

ORBITER SPARES QUANTIFICATION

R. GREESON
M. GROH-HAMMOND

OUTLINE

1. Probability of Sufficiency (POS) Equation
2. Assumptions of POS
3. Alternative Methods
4. Conclusions

Probability of Sufficiency Equation

$$POS = e^{-\lambda T} \sum_{N=0}^{S} \frac{(\lambda T)^{N}}{N!}$$

POS = PROBABILITY OF HAVING A SPARE AVAILABLE

S = NUMBER OF SPARES, ON HAND (SOH) & DUE IN (SDI)

T = REPAIR TURNAROUND TIME

λ = REMOVAL RATE PER DAY

POS EQUATION

λ = MDR * TPOT

MDR = MAINTENANCE DEMAND RATE

$$\text{MDR} = \frac{\text{TOTAL NUMBER OF FAILURES}}{\text{TOTAL OP HOURS}}$$

TPOT = TOTAL POWER ON TIME

TPOT = QPV * (((FPOT+GPOT) * FLTS/YR) + (LPOT * 12 MO / YR))

QPV = QUANTITY PER VEHICLE
FPOT = FLIGHT POWER ON TIME
GPOT = GROUND POWER ON TIME
LPOT = LABORATORY POWER ON TIME

ASSUMPTIONS

1. The failures of a part are a function of time.
2. Failures are random in time and indenpendent of each other.
3. The time between failures for a part follow an exponential probability distribution.
4. The operating hours of a part are uniform over a time interval.
5. The repair turnaround time for a part is constant.
6. The maintenance demand rate is accurate for the part.

ASSUMPTION 1

Individual failures were assumed to be a function of time or operating hours.

A review of the failure history showed that there are two categories of failures

- Time dependent
- Cycle dependent

Time dependent

- Failures are directly related to operating hours
- More failures will occur as more hours are accumulated
- Example - Multiplexer / demultiplexer (MDM)

ASSUMPTION 1

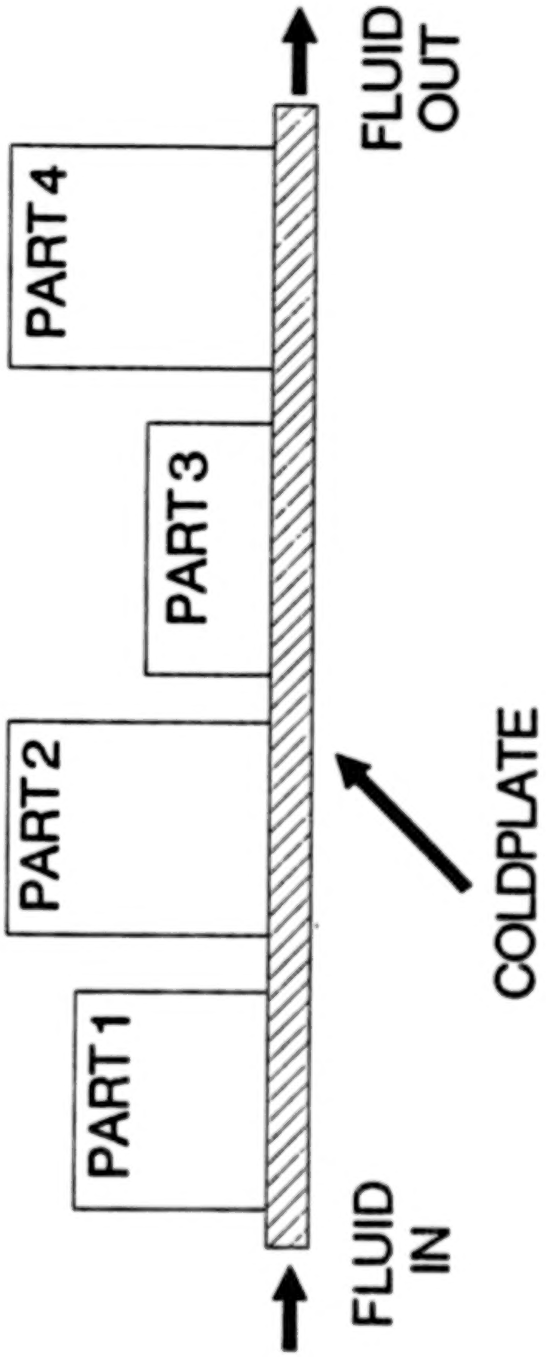
Cycle dependent

Failures are directly related to a cycle

Cycles can be the mission, part of the mission, or an external factor

Example - Coldplate

Violation of first assumption


FLUID IN
PART 1
PART 2
PART 3
PART 4
FLUID OUT
COLDPLATE

ASSUMPTION 1

Time dependent failures

$$\lambda = MDR * TPOT$$

Cycle dependent failures

$$\lambda = CMDR * (\text{predicted number of cycles / day})$$

$$CMDR = \frac{\text{total number of failures of an LRU}}{\text{total number of cycles experienced in the past}}$$

ASSUMPTION 2

Failures were assumed to be random in time and independent of each other.

A specific action would cause only one part to fail regardless of the quantity per vehicle (qpv).

Review of when the failures occurred

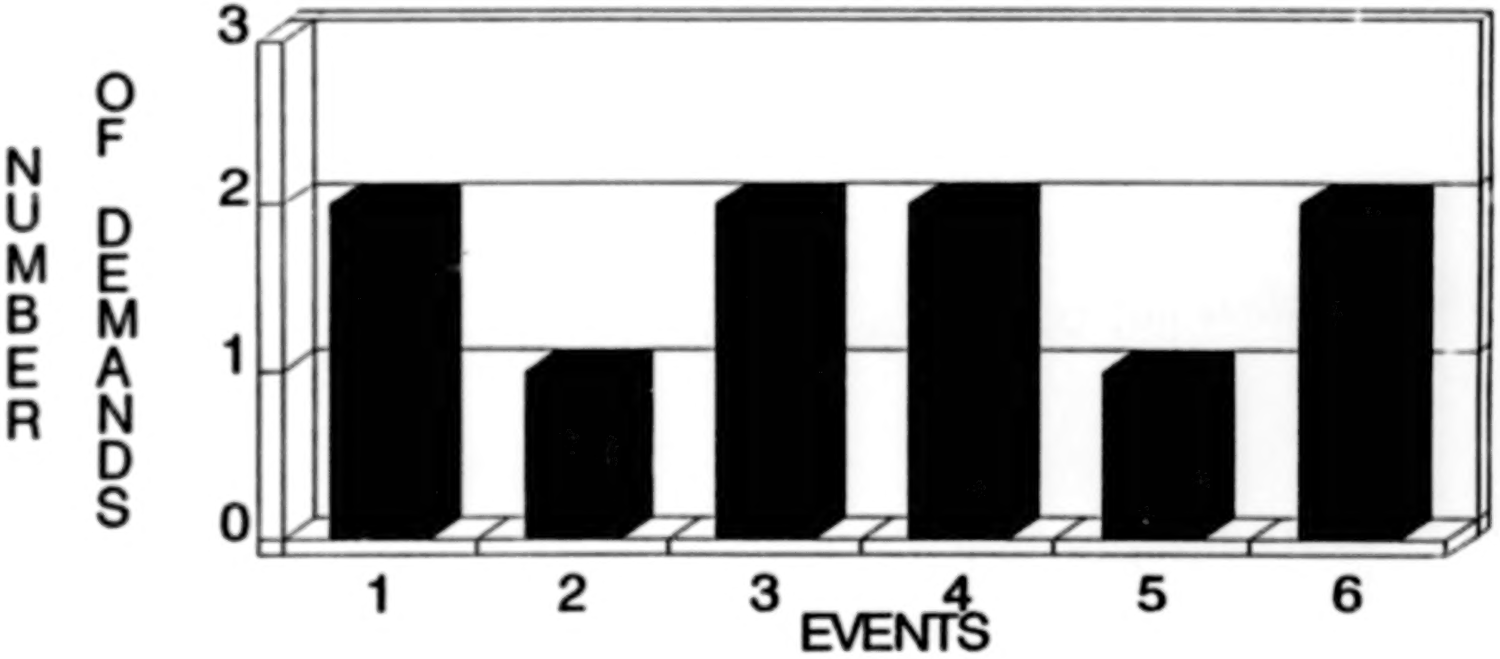
- For FA MDM no multiple failures found
- For the water spray boiler multiple failures found

New method developed for multiple failures

ASSUMPTION 2

MULTIPLE FAILURES

Example - A part (qpv = 2) has ten failures in which four times one event casued two failures (demands) and two times one event caused a single failure (demand)



- Old method considers this ten separate events.
- New method considers this six separate events with four multiple demands.

ASSUMPTION 2

POS TABLE

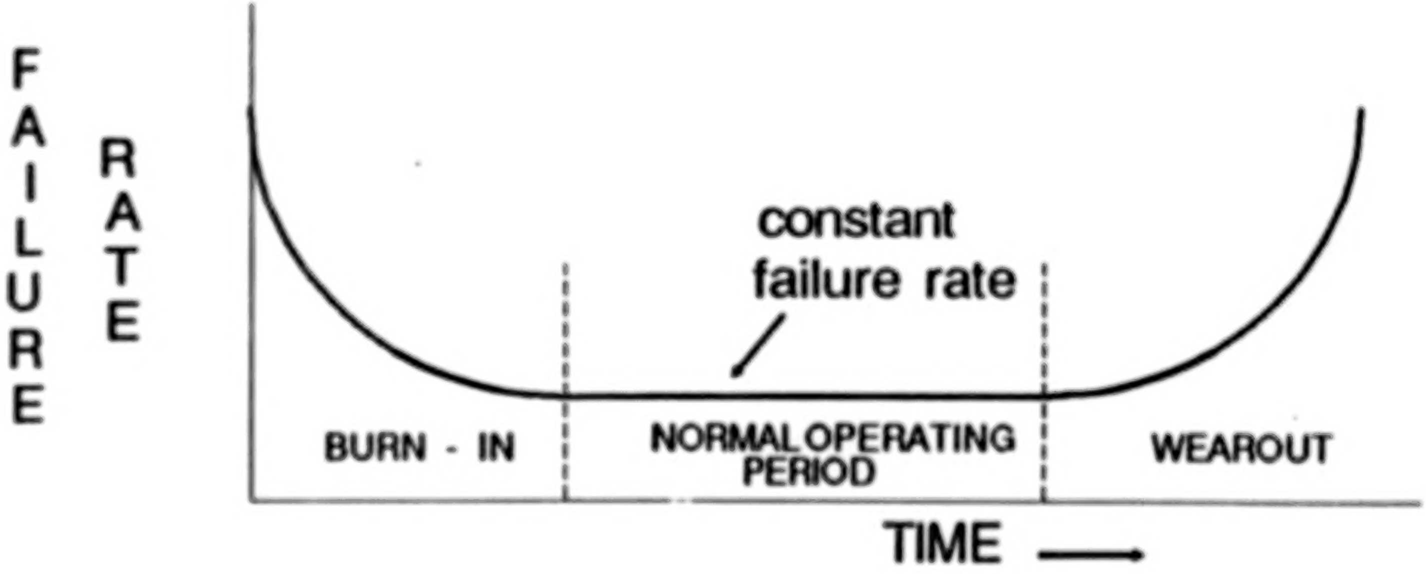
OLD METHOD		NEW METHOD	
NUMBER OF SPARES	POS	NUMBER OF SPARES	POS
0	34.9%	0	53.2%
1	71.7%	1	64.4%
2	**91.0%**	2	88.0%
3	97.8%	3	**92.7%**

ASSUMPTION 3

The time between failures for a part follow an exponential probability distribution.

- For this to be valid, the part must be operating in the normal operating phase of the life characteristics curve.

TYPICAL LIFE CHARACTERISTIC CURVE

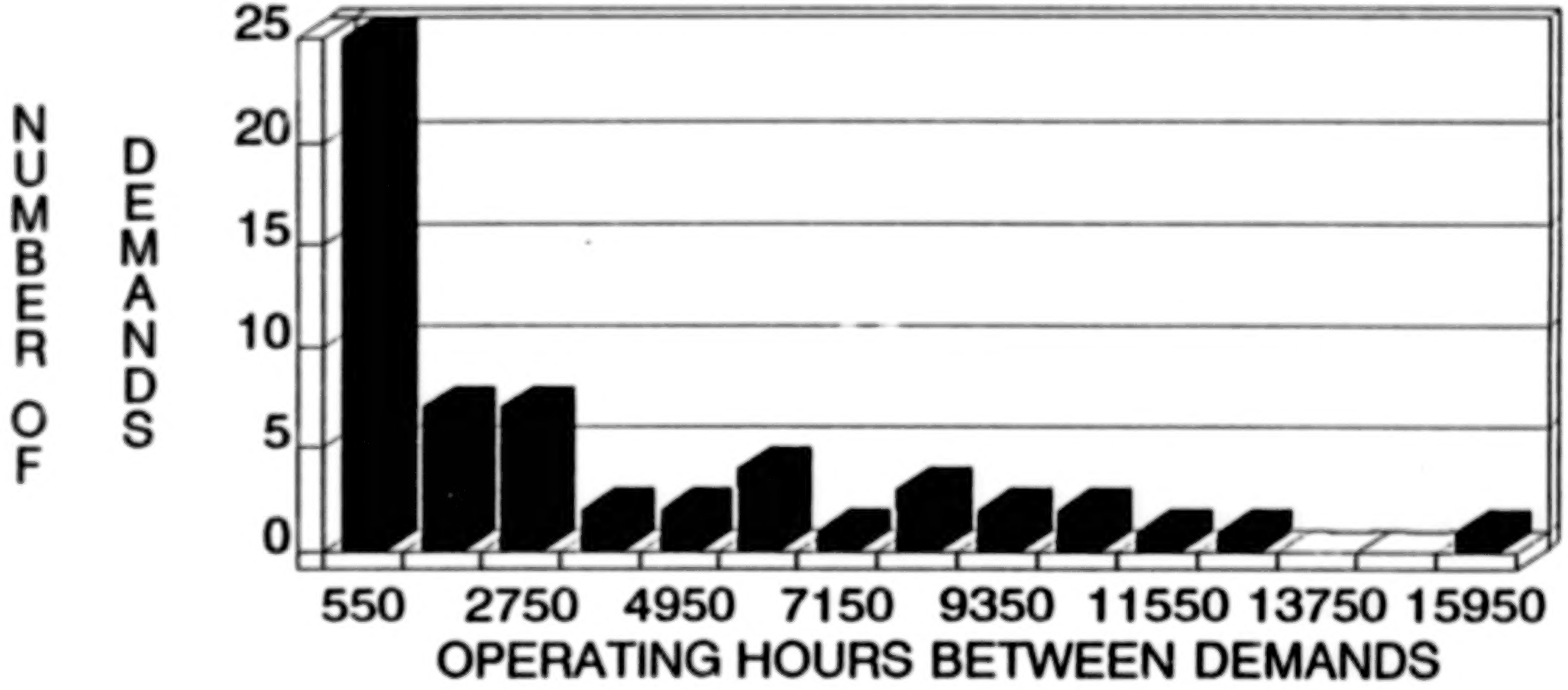

FAILURE RATE
constant failure rate
BURN - IN
NORMAL OPERATING PERIOD
WEAROUT
TIME ⟶

- No parts were found with increasing or decreasing failure rates

ASSUMPTION 3

- After verification of normal operating period, goodness-of-fit test must be performed to determine distribution of time between demands

MDM MC615-0004-XXXX



- To date no part found that violates this assumption

ASSUMPTION 4

The operating hours of a part are uniform over a time interval.

Operating hours have not been uniform in the past

STS - 23	990 GPOT
STS - 24	2532 GPOT

Numerous factors influence operating hours

- unanticipated retesting of the part
- additional requirements being imposed on the part from one flow to another flow
- weather

ASSUMPTION 4

- Projected operating hours obtained from Mission Planning

  14 flts / yr   1693 avg gpot per flow

- Historical data shows violation of this assumption

- Once a mature flight rate is reached, estimate based on data from Mission Planning will be sufficient.

ASSUMPTION 5

The repair turnaround time (RTAT) for a part is constant.

- Engineering estimate of RTAT used in the past

- Review of actual repair history

    Variable RTAT's

    RTAT's dependent on various factors

        - type of failure
        - workload at repair facility
        - capacity of repair facility

ASSUMPTION 5

Actual RTAT's for the S-Band Transponder are:

RTAT's (days)
72
147
18
17
21
124

Engineering estimate = 120 days

Actual average = 67 days

Spares	POS (120 days)	POS (67 days)
1	54.0%	78.4%
2	79.5%	**94.2%**
3	**92.7%**	98.8%

Projected RTAT's should be based on actual RTAT's.

ASSUMPTION 6

The maintenance demand rate (MDR) is accurate for the part.

MDR was based on engineering estimate rather than actual data

Sufficient data is now available to determine an actual MDR.

$$\text{Actual MDR} = \frac{\text{actual number of failures}}{\text{actual number of op hrs experienced in the past}}$$

	EMDR	AMDR
FF MDM	0.645	0.066

Actual MDR is a more accurate representation of the true failure rate.

ASSUMPTION 6

No consideration was given to cycle type failures.

Modifications must be taken into account.

Working environment of the part must be considered.

Display Driver Unit (DDU)

	Number of failures	Total Op Hrs	MDR
KSC (orbiters)	14	13,500	1.037
Laboratory	12	95,000	0.126
Combined	26	108,500	0.240

ASSUMPTION 6

The part has two distinct MDR's and both must be used in the spares quantification.

Lambda (λ) is adjusted in the POS equation.

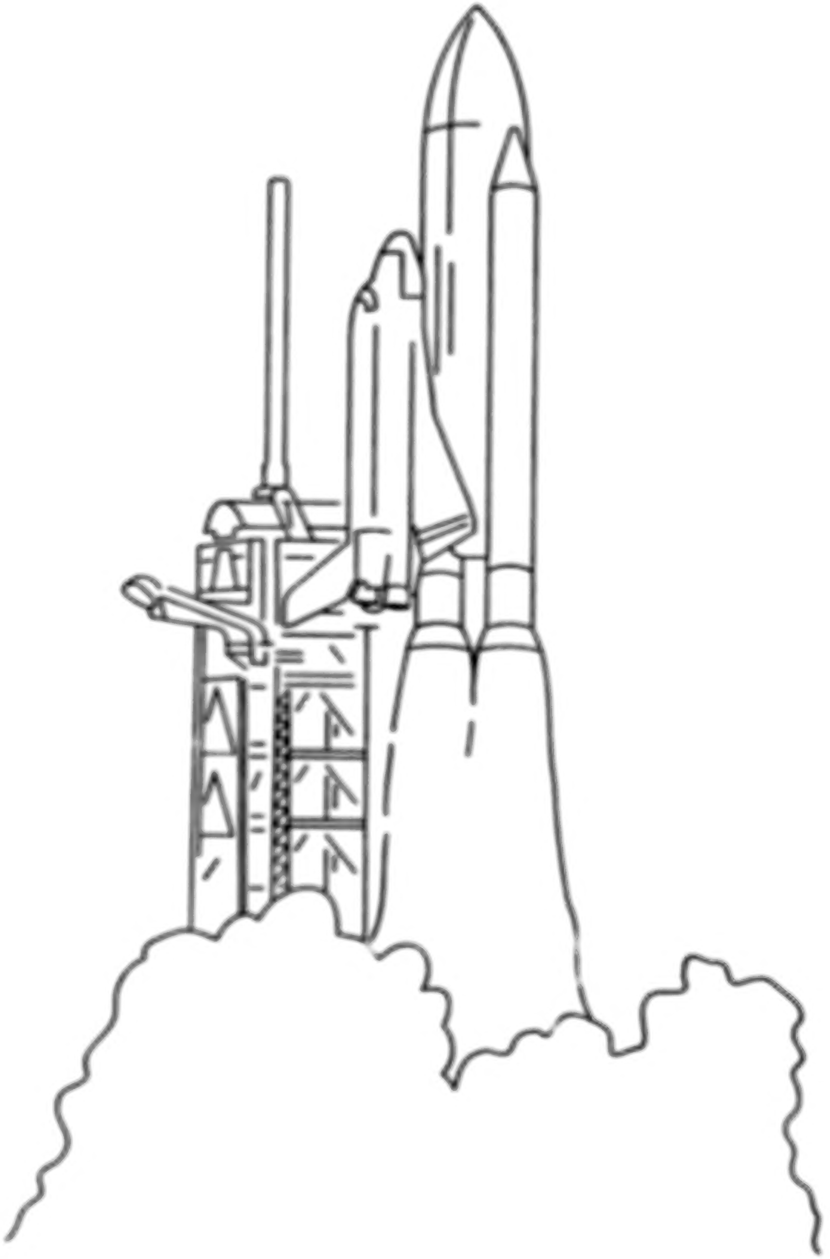
$$\lambda = QPV * (OMDR * ((FPOT + GPOT) * FLTS / YR) + (LMDR * (LPOT * 12 \text{ MO} / YR)))$$

POS ASSUMPTIONS SUMMARY

ASSUMPTION	FINDINGS
1. Time dependent failures	Two categories of failures
2. Random independent failures	Multiple failures
3. Exponential probability distribution	Normal operating phase Goodness-of-fit test
4. Uniform operating hours	Variable operating hours Estimate from Mission Planning
5. Constant RTAT	Variable RTAT's Actual RTAT's for projected RTAT's
6. Accurate MDR	Actual data with consideration for modifications and environment

CONCLUSION

- Parts are unique and have unique characteristics.
- Spares quantification is a dynamic process
- One method of spares quanitification is not appropriate for every part.
- Additional methods must continue to be developed.



INITIATIVES TO INCREASE INVENTORY ACCURACY

J.D. HERRING, MANAGER
LOGISTICS ENGINEERING

Lockheed
Space Operations Company

OVERVIEW

- o INTRODUCTION
- o CASE STUDY
  - OBJECTIVE
  - BACKGROUND
  - SPC ACTIONS TO ENHANCE INVENTORY ACCURACY
  - SUMMARY

INTRODUCTION

- INVENTORY ACCURACY IS A MEASUREMENT OF THE ACCURACY OF THE RECORDS AND THE ADEQUACY OF THE INVENTORY CONTROL SYSTEM
- MEASURED BY PHYSICALLY COUNTING ALL ITEMS IN THE INVENTORY (BY STATISTICAL SAMPLING OR 100% COUNT) AND COMPARING THE COUNTED QUANTITY TO THE RECORD BALANCE - EXPRESSED AS A PERCENTAGE

WHAT IS SUFFICIENT ACCURACY?

- MINIMUM ACCEPTABLE VALUE (MAV) ESTABLISHED BY CONTRACT OR POLICY

FOR EXAMPLE

- NHB 4100.1B ESTABLISHES SAMPLING METHODOLOGY TO PROVIDE "95% CONFIDENCE THAT 85% OF THE RECORDS ARE WITHIN THE ACCEPTABLE ERROR LIMITS"
- ERROR DEFINED AS RECORD TO COUNT QUANTITY DISCREPANCY OF TEN PERCENT OR MORE OR A DOLLAR VARIANCE OF TEN PERCENT OR MORE OF EXTENDED VALUE

WHAT IS SUFFICIENT ACCURACY?

THE REAL ACCEPTANCE LEVEL LIES ABOVE THE MAV AND IS DRIVEN BY SEVERAL FACTORS:

- DOES THE INVENTORY SUPPORT TASKS ON A MISSION OR TIME SENSITIVE CRITICAL PATH?
- IS WILLINGNESS TO ACCEPT DELAYS DUE TO "OUT OF STOCKS" GREATER THAN WILLINGNESS TO DEVOTE ADDITIONAL RESOURCES TO INVENTORY CONTROL SYSTEMS?

PROBABLE CASE

NO WILLINGNESS TO ACCEPT "OUT OF STOCK" DELAYS AND

NO WILLINGNESS TO DEVOTE ADDITIONAL RESOURCES TO INVENTORY CONTROL SYSTEMS

CASE STUDY

IN AUGUST 1988 THE SHUTTLE LOGISTICS PROJECT OFFICE ASKED THE SHUTTLE PROCESSING CONTRACTOR TO REVIEW ITS INVENTORY CONTROL SYSTEMS FOR FLIGHT HARDWARE AND CONSIDER INSTITUTING A DOUBLE SAMPLING TECHNIQUE FOR RECORD TO COUNT VERIFICATION WITH A MUCH MORE STRINGENT MAV THAN WAS CURRENTLY IMPOSED

OBJECTIVE

ENHANCE INVENTORY ACCURACY BY:

- WAREHOUSE PROCEDURAL IMPROVEMENTS
- INCREASED EMPHASIS ON TRAINING
- SYSTEM (KIMS) IMPROVEMENTS
- MORE EXTENSIVE PHYSICAL INVENTORY

BACKGROUND

- SPC INVENTORY AND RESULTANT ACCURACY BASED ON GOVERNMENT PROVIDED SYSTEM/CRITERIA

- INVENTORY ACCURACY CRITERIA ESTABLISHED IN NHB 4100.1A AND TRANSLATED INTO KIMS LOGIC AND PROGRAMMING

- ESTABLISHES A 95% CONFIDENCE LEVEL THROUGH STATISTICAL SAMPLING THAT 85% OF THE RECORDS ARE WITHIN THE ACCEPTABLE ERROR LIMITS

- NHB 4100.1A ERROR LIMITS:
  - ERROR: RECORD TO COUNT QUANTITY DISCREPANCY OF TEN PERCENT OR MORE OR A DOLLAR VARIANCE OF TEN PERCENT OR MORE OF EXTENDED VALUE
  - VARIANCE: RECORD TO COUNT QUANTITY DISCREPANCY OF LESS THAN TEN PERCENT OR A DOLLAR VARIANCE OF LESS THAN TEN PERCENT OF EXTENDED VALUE. NOT INCLUDED IN ACCURACY CALCULATIONS

SPC APPROACH TO INCREASE INVENTORY ACCURACY

- INVENTORY ACCURACY RESULTS FROM OPERATING ENVIRONMENT
  - INVENTORY MANAGEMENT SYSTEM FUNCTIONALITIES
  - PERSONNEL TRAINING
  - OPERATING PROCEDURES
  - DISCIPLINE
- PHYSICAL INVENTORIES PROVIDE SUPPORTING ROLE
  - CONFIRMATION OF SYSTEM PERFORMANCE
  - RECONCILIATION
  - MANAGEMENT VISIBILITY AND FEEDBACK
- CRITERIA CHANGES (ACCURACY GOALS) REQUIRE CORRESPONDING ADJUSTMENTS TO OPERATING ENVIRONMENT
  - ADDITIONAL RESOURCES
  - LEAD TIME TO IMPLEMENT
- CURRENT ACTIONS DIRECTED AT IMPROVING OVERALL SYSTEM
  - WITHIN EXISTING RESOURCES
  - MINIMUM IMPACT TO OPERATIONAL SUPPORT

SPC ACTIONS TO ENHANCE INVENTORY ACCURACY

ACTIONS TAKEN	SUPPLY SUPPORT	INVENTORY MANAGEMENT	TECHNICAL TRAINING	DATE INITIATED
1. MANAGEMENT ACTION PLANS	X	X		AUGUST '88
2. USE OF PRE-INVENTORY LOCATION SURVEY (PILS)	X			JULY '88
3. WAREHOUSE REFUSALS				
AUTHORIZATION LEVELS ESTABLISHED	X			AUGUST '88
GOAL SETTING	X			NOVEMBER '88
FEEDBACK TO SUPPLY SPT AFTER ANALYSIS		X		NOVEMBER '88
4. IMPROVED KIMS TRAINING	X	X	X	DECEMBER '88
5. ESTABLISH KIMS TRAINING/ TEST DATA BASE FOR HANDS-ON SESSIONS	X	X	X	MARCH '89
6. SAMPLE LOT ANALYSIS AND FEEDBACK TO SUPPLY SPT		X		APRIL '88
7. REVISE PROCEDURES	X	X	X	NOVEMBER '88
8. KIMS ENHANCEMENTS	X	X		NOVEMBER '88
9. ELIMINATE KIMS "LOST MESSAGES"	X	X		NOVEMBER '88

STORAGE LOCATION ENHANCEMENTS

o CONDUCTING PRE INVENTORY LOCATION SURVEY (PILS) FOR ALL WAREHOUSE LOCATIONS

  - ALL FLIGHT SPARE LOCATIONS VERIFIED IN 1988

  - MAIN WAREHOUSE NOW IN PROGRESS

o IMPROVING IDENTIFICATION OF MATERIAL AND PALLET STORAGE LOCATION

  - ATTACHING PILS CARD TO MATERIAL

  - CONTAINS NSN, ITEM NAME, UNIT OF ISSUE, LOCATION

  - CONSIDERING USE OF MAGNETIC CARD HOLDERS

o IMPROVED RELIABILITY OF RETURNING PALLET TO PROPER LOCATION

  - TAB CARDS WITH LOCATION ARE BEING ATTACHED AS PALLET IS HANDLED AND DURING PILS

  - LOCATION APPLIED TO PALLETS AS NEW RECEIPTS ARE PROCESSED

WAREHOUSE REFUSALS

o REVISED ISSUE PROCEDURES TO REQUIRE MANAGEMENT REVIEW OF WAREHOUSE REFUSALS

o USE WAREHOUSE REFUSAL CHECK LIST FOR REVIEW AND APPROVAL

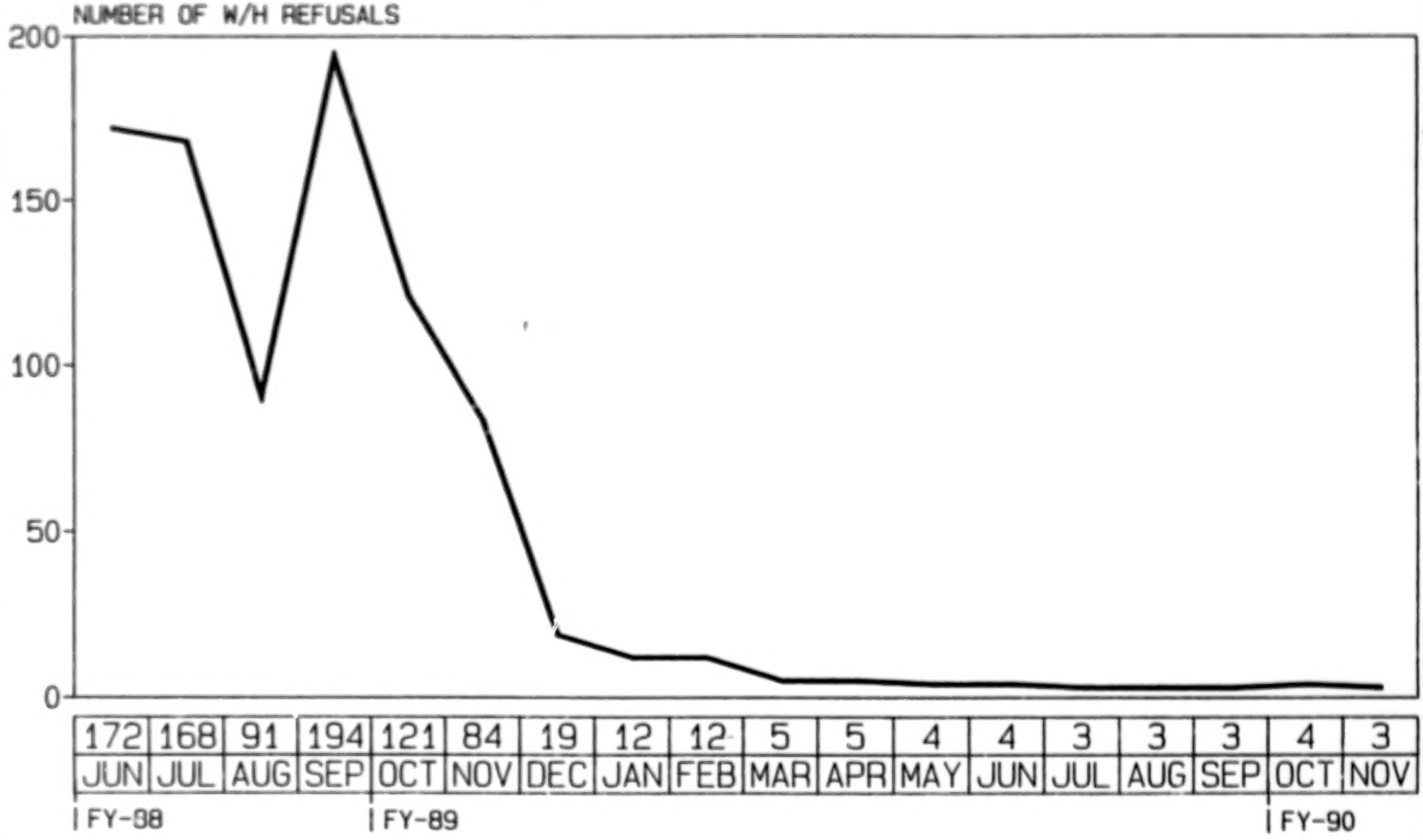
o DRAMATIC DECREASE

- 194 IN SEPT 1988
- 12 IN JAN AND FEB 1989
- 3 IN NOV 1989

o FEEDBACK ON CHARTS TO INCREASE EMPLOYEE AWARENESS

o CAUSE AND EFFECT ARE DISCUSSED IN DAILY CREW MEETINGS

WAREHOUSE REFUSALS



172	168	91	194	121	84	19	12	12	5	5	4	4	3	3	3	4	3
JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV

ORIGINAL GOAL = 27
NOW REVISED TO "0"

IMPROVE TRAINING

- o INTENSIFIED SUPPLY SUPPORT OJT SINCE JULY '88
- o RECEIVING FLOW REVIEWED TO IDENTIFY WEAKNESSES
  - COMPLETED RECEIVING DOCUMENTS
  - MESSAGE MATCH
  - KIMS SUSPENSE LISTING
  - RECEIVING RECORDS
  - CLOSE OUT PROCESS
- o PROVIDE FEEDBACK TO CORRECT DEFICIENCIES
  - INDIVIDUAL "SPOT" TRAINING
  - GROUP TRAINING FOR BROADER DEFICIENCIES
- o PREPARED AND PRESENTED KIMS RECEIVING TRAINING COURSE
  - CLASSROOM OVERVIEW
  - INDIVIDUAL, HANDS-ON TERMINAL TRAINING
  - ADDITIONAL KIMS COURSES TO BE DEVELOPED

REVISED APPLICABLE OPERATING PROCEDURES

PROCEDURE #	PROCEDURE	DATE REVISED
4030-114	RECEIPT AND ISSUE OF FLIGHT MATERIAL	DECEMBER '88
4030-122	ISSUE AND DELIVERY OF MATERIAL	MARCH '89
4040-214	PHYSICAL INVENTORY OF MATERIAL STOCKS	FEBRUARY '89
4040-215	INVENTORY ADJUSTMENTS	NOVEMBER '88

KIMS ESRs TO IMPROVE INVENTORY ACCURACY

ESR #	ESR TITLE	DATE
86027.0781	LOCATION CHANGE	11/16/88
86027.0784	884 SUSPENSE EDITS	11/22/88
86027.0782	BIN LABELS	12/05/88
86027.0778	LOCATION ASSIGNMENT	12/12/88
86027.0798	REPORT ADJUSTMENT	12/16/88
86027.0825	POST-POST TURN-IN LOCATION	01/24/89

"LOST" KIMS MESSAGES

- o IMPACT: KIMS INVENTORY RECORD REDUCTIONS WITH NO MATERIAL MOVEMENT
- o INVESTIGATED CAUSES FOR LOST MESSAGES
    - IMPROPER TERMINAL LOG-ON/LOG-OFF
    - PAPER JAMS IN PRINTERS
    - UNSCHEDULED KIMS DOWNTIME
    - RUNNING OUT OF PAPER
    - PRINTER GOES DOWN WITHOUT VISIBLE/AUDIBLE WARNING, INDICATES STILL ON LINE
    - NO ACKNOWLEDGEMENT OF MESSAGE RECEIPT BY PRINTER
- o IMPLEMENTED NEW ROP LOG-ON PROCEDURE TO ENSURE ROP IS OPERATIONAL
- o PROVIDED METHOD FOR OFF-SHIFTS TO RECALL KIMS MESSAGES

ENHANCED PHYSICAL INVENTORY

- CURRENT PROCESS BASED ON KIMS SAMPLING PROGRAM
  - NHB CRITERIA
  - BIENNIAL CYCLE

- PROPOSED PROCESS PROVIDES 100% PHYSICAL INVENTORY OF ACTIVE FLIGHT HARDWARE
  - NHB CRITERIA
  - ANNUAL CYCLE
  - KIMS SAMPLING FOR ALL OTHER INVENTORY ITEMS

SUMMARY

- SPC HAS INITIATED IMPROVEMENTS IN INVENTORY ACCURACY
  - PILS
  - GOAL SETTING AND FEEDBACK
  - KIMS ENHANCEMENTS
  - KIMS TRAINING
  - PROCEDURE IMPROVEMENT
- INVENTORY ACCURACY ON UPWARD TREND
- RECOMMENDED PHYSICAL INVENTORY PLAN PLACES DESIRED EMPHASIS ON CRITICAL FLIGHT ITEMS WHILE NOT INCURRING MAJOR KIMS REPROGRAMMING EXPENSE OR INCREASED SPC LABOR COST

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE PRESENTATION

PEDRO E. JIMENEZ
DECEMBER 4, 1989

C-4
280

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

RESEARCH AND PROGRAM MANAGEMENT OVERVIEW

- PERSONNEL AND RELATED COST - FUND SOURCE 1
- TRAVEL - FUND SOURCE 2
- OPERATION OF INSTALLLATION - FUND SOURCE 3

"FUND SOURCE 3"

"PROVIDES FOR A BROAD RANGE OF SERVICES, SUPPLIES AND EQUIPMENT IN SUPPORT OF THE CENTERS' INSTITUTIONAL ACTIVITIES."

THREE MAJOR SUBFUNCTION BREAKS:

- FACILITIES SERVICES
- TECHNICAL SERVICES
- MANAGEMENT AND OPERATIONS

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

RECENT NASA FS 3 MANAGEMENT INITIATIVES

1988	APPROPRIATION REALIGNMENT - ENSURED PROPER ACCOUNTING OF R&PM PROGRAM AND FISCAL REQUIREMENTS - ESTABLISHED FMM DEFINITIONS
SUMMER 1989	ESSENTIAL BASELINE STUDY - DEVELOP GOOD UNDERSTANDING OF FS-3 FUNDING REQUIREMENTS BY FUNCTION - CENTERS GATHERED AND DEVELOPED ESSENTIAL BASELINE NEEDS - HEADQUARTERS TEAM VISITED ALL CENTERS - EXTENSIVE DATABASE ESTABLISHED FOR FS 3 - MAJOR INCREASE IN FS 3 FORWARDED TO OMB
WINTER 1990	- REFINE FUNCTIONAL DEFINITION INCONSISTENCIES - PREPARE FOR EXECUTING FY 1991 IMPROVEMENTS - ANTICIPATE FY 1992 REQUIREMENTS - ESTABLISH INSTITUTIONAL RESOURCES COUNCIL OR SOME FORUM FOR IMPROVED COMMUNICATIONS

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

FUND SOURCE 3 PROGNOSIS

- ESTABLISHMENT OF INSTITUTIONAL RESOURCES COUNCIL
    - ADA-3
    - PROGRAM OFFICES
    - CENTER COMPTROLLERS/INSTITUTIONAL/RESOURCE MANAGERS
- PREPARE ACCURATE AND DEFENSIBLE BUDGET NARRATIVES
- DEVELOP EXECUTABLE PHASING PLAN FOR ALL FUND SOURCES
- FY 1992 REQUIREMENTS REVIEW

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

R&PM IOP PROCESS
FY 92 BUDGET FORMULATION

- IOP-1
  - CENTERS REFINE CURRENT YEAR (FY 90) OPERATING PLAN
  - HIGHLIGHT R&PM POTENTIAL PROBLEMS FOR (FY 91)
  - BASIS FOR SPRING PREVIEW (FY 92)
- IOP-2
  - FINAL UPDATE OF CURRENT YEAR SPENDING LEVELS (FY 90)
  - REFINE BUDGET AND PROGRAM DATA FOR FY 91
  - REVISE SPRING REVIEW (FY 92 REQUIREMENTS) FOR OMB
  - ENSURE OMB FY 92 SUBMISSION IS ACCURATELY PORTRAYED
- IOP-3/CONGRESSIONAL
  - POST FY 90 ACTUALS
  - PREPARE AND EXPAND FY 91 OPERATING PLAN
  - MARKUP OF OMB FY 92 CUTS
  - PREPARE BACKUP TESTIMONY FOR CONGRESSIONAL HEARINGS

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

R&PM IOP PROCESS

HOW CAN YOU GET PREPARED?

- CONTACT COMPTROLLER/DIRECTOR OF ADMINISTRATION FOR GUIDELINES

- ENSURE THAT FUNCTIONS REFLECT ACCURATE BASELINE LEVELS

    - PROPER DOLLARS FOR MAINTENANCE FUNCTIONS
        - MAINTENANCE AND RELATED SERVICES
        - UTILITY SERVICES
        - ADMINISTRATION ADP
        - SHOP SUPPORT
        - TRANSPORTATION
        - COMMON SERVICES
        - CUSTODIAL SERVICES

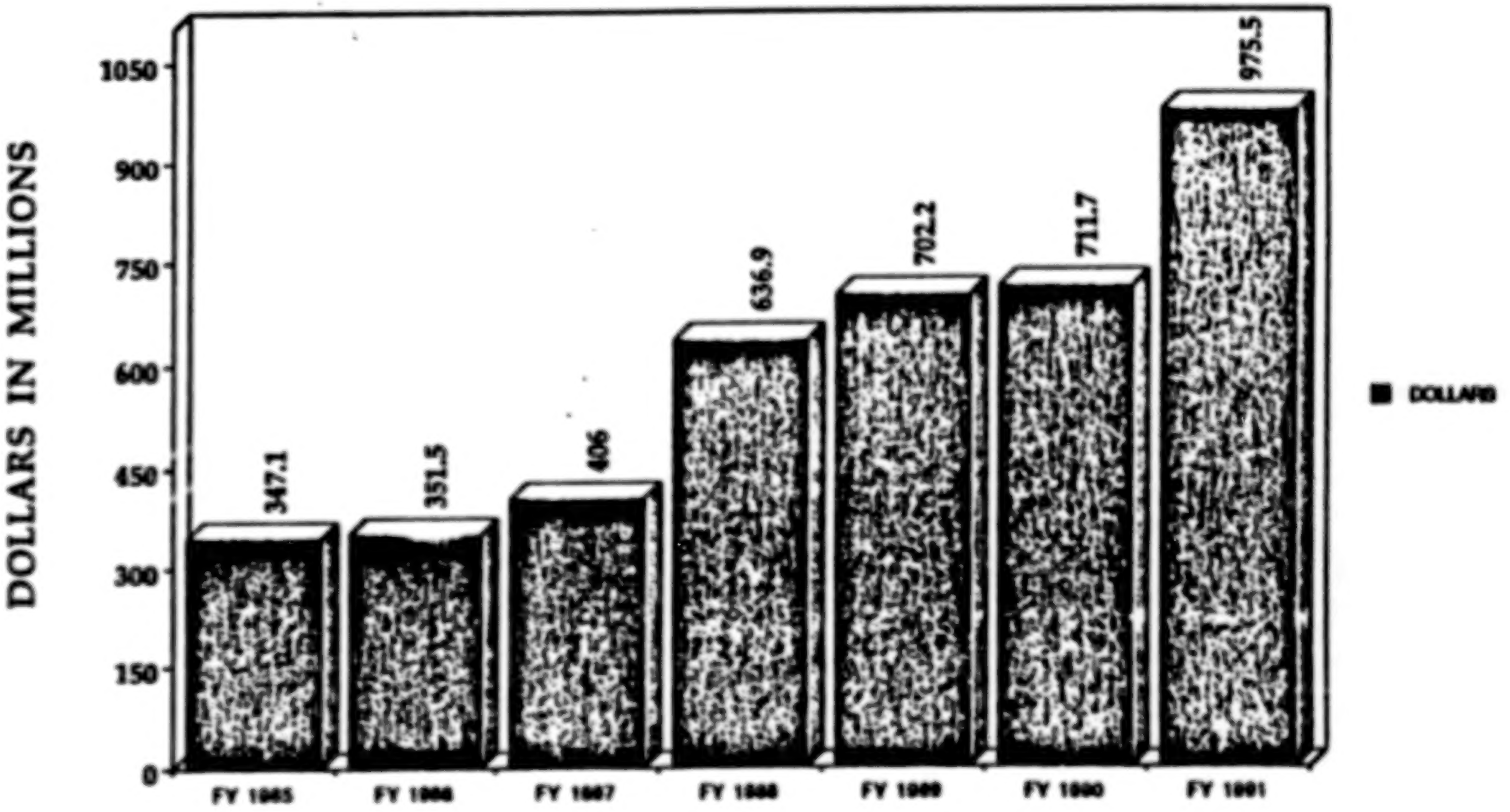
    - PROPER LEVELS OF FUNDING FOR SUPPORT SERVICE CONTRACT REQUIREMENTS

    - ALIGN BUDGET FUNCTIONS WITH FMM DEFINITIONS

- ESTABLISH OBJECTIVE STANDARDS FOR EXECUTING FS 3 FUNDING

- TEAM APPROACH TO SOLVE PROBLEMS AND PUSH IMPROVEMENTS

SUPPLY AND EQUIPMENT MGMT CONFERENCE
FUND SOURCE 3 TRENDS



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SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE
ARE WE BUDGETING FUNCTIONS PROPERLY?

BUDGET SUBFUNCTION	SUPPLIES	EQUIPMENT
FOR EXAMPLE		
FACILITY MAINTENANCE		
EQUIPMENT MAINTENANCE		
ADP MAINTENANCE		
ADP EQUIP/LEASE/PURCHASE		
PHOTO SERVICES		
GRAPHICS		
PRINTING AND REPO.		
GEN. PURPOSE MOTOR VEH.		
INTERAGENCY MOTOR POOL		
AIRCRAFT OPERATIONS		
ADMIN EQUIP/LEASE/PURCHASE		
OFFICE FURNITURE		

EQUIPMENT WORKSHOP

Equipment Management Workshop
Tuesday Dec. 5, 1989 1:00-5:00

1:00-1:15 NEMS\NMIS\NPDMS Interface Considerations

2:00-2:30 Report on Property Custodian Module

2:45-3:00 NEMS CCB Update

3:00-3:30 NEMS CCD Transfer Problems

3:30-4:00 NEMS Central Cataloging

4:00-5:00 PSCN Gateway Equipment Control Issues

Equipment Management Workshop
Wednesday DEC. 6,1989 1:00-5:00

1:00-1:30 Equipment Performance Measures

1:30-2:00 Equipment Budget Standards

2:00-2:15 Standard Report Mechanisms

2:15-2:30 Results on Property Survey Officer Workshop

2:45-3:00 Global Change Transaction Authority Level

3:00-3:15 Use of Flight Manifest for Control Purposes

Equipment Management Workshop
Wednesday Dec. 6,1989 1:00-5:00

3:15-3:30 Nems Transaction Used for
Contractor Acquired Property

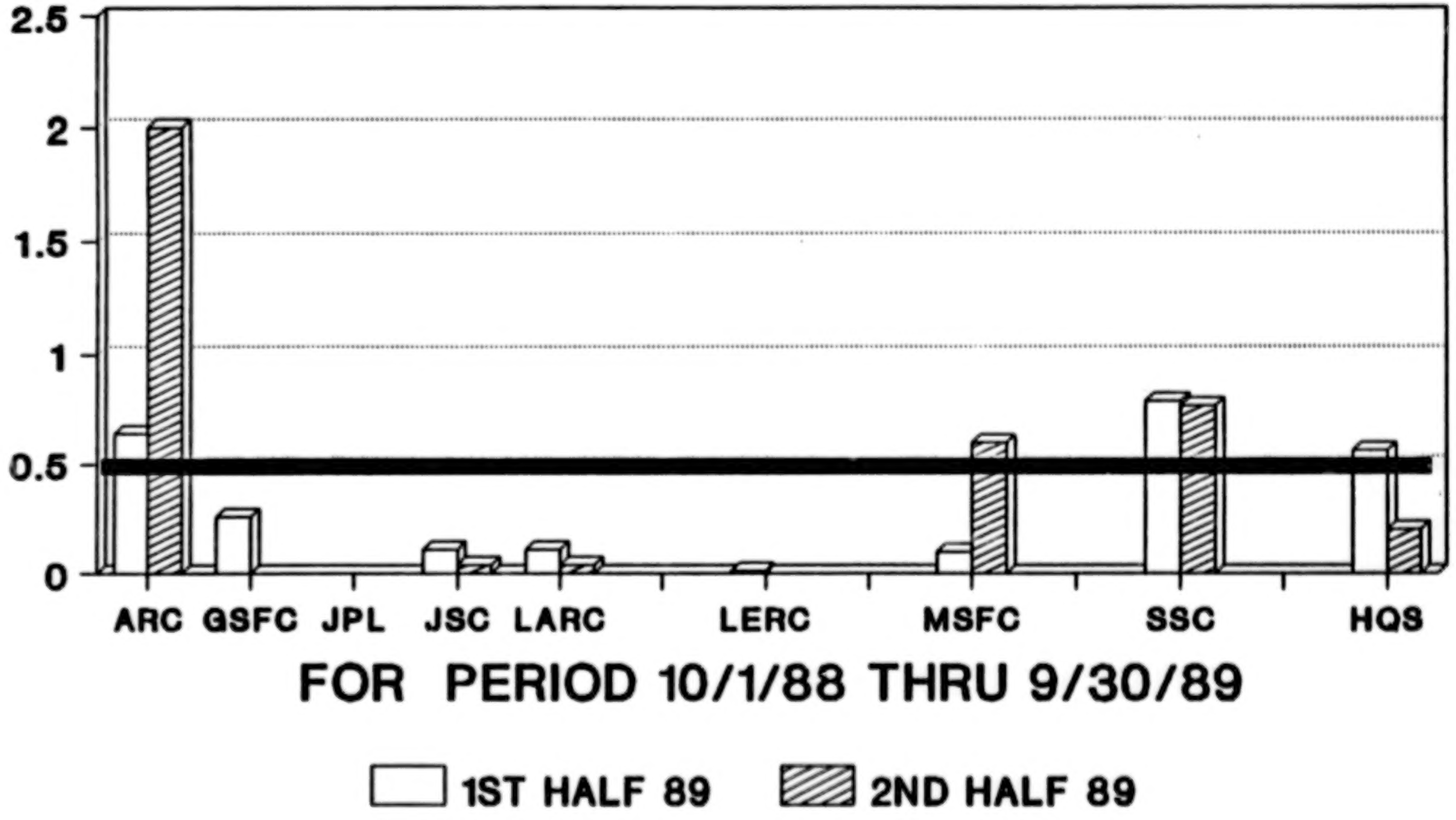
3:30-4:00 Equipment Pool/Carrier Account

4:00-5:00 Center Innovations

Equipment Management Workshop
Thursday Dec. 7,1989 10:15-11:30

10:15-11:30 AMES Contract Property Custodian
Program

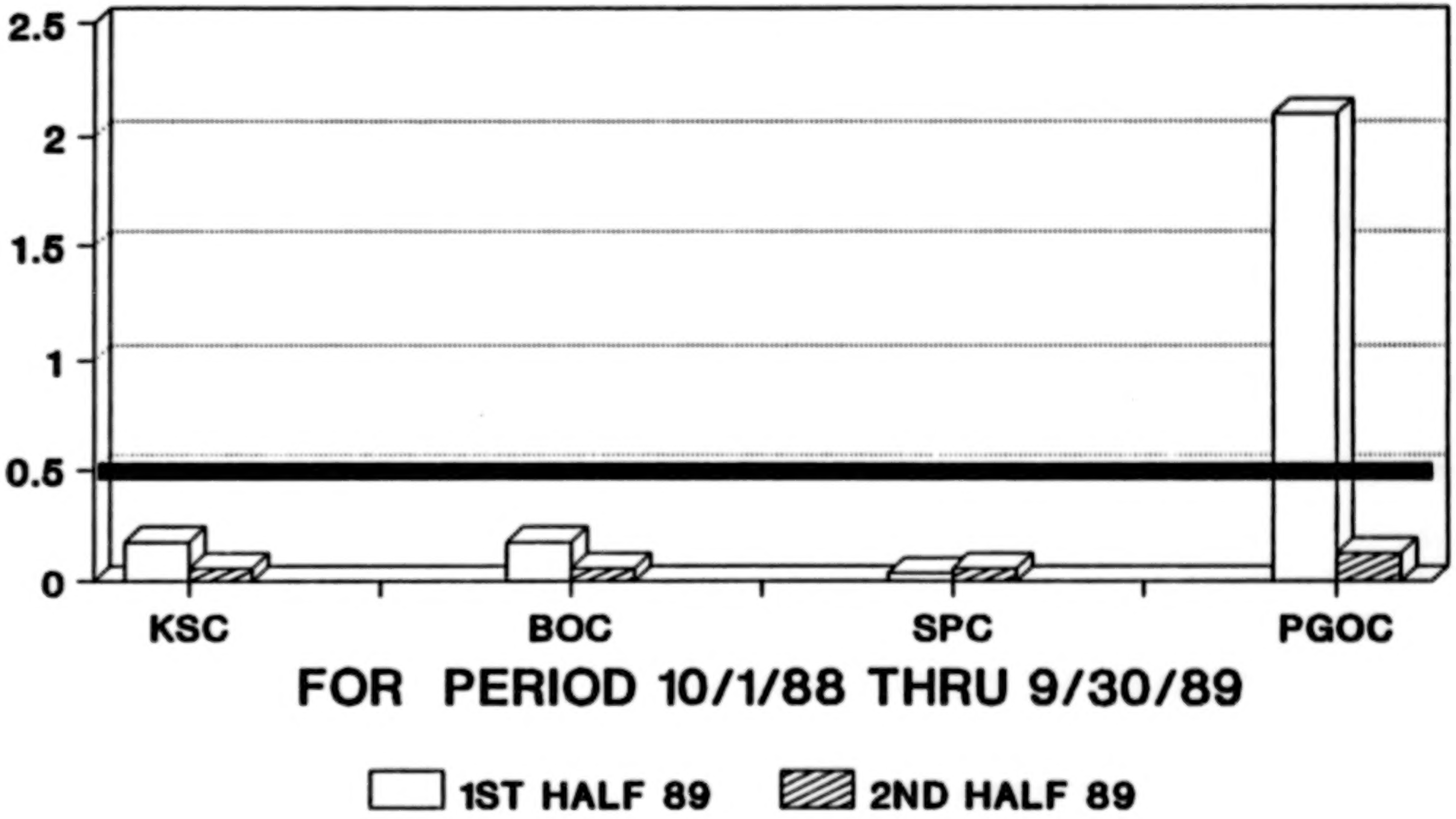
Performance Measures
Equipment Loss Rate



NASA Standard .5%

Performance Measures

Equipment Loss Rate



FOR PERIOD 10/1/88 THRU 9/30/89

NASA Standard .5%

PERFORMANCE MEASURES: EQUIPMENT MANAGEMENT
REPORTING PERIOD FROM __________ TO __________

1. Equipment Loss Rate

NATURE: Equipment items lost and stolen divided by equipment base expressed as a percentage.

SOURCE: NEMS and Survey Report Register.

METHOD:

A. Enter the number of records for the following DELETE transactions:

TR 71 .... __________

TR I71 .... __________

Total TRs .... __________

B. Enter the number of records for the following ADD transactions:

TR 19 .... __________

TR I19 .... __________

Total TRs .... __________

C. From the survey register, enter the number of survey reports resulting from DAMAGE only ..... _______

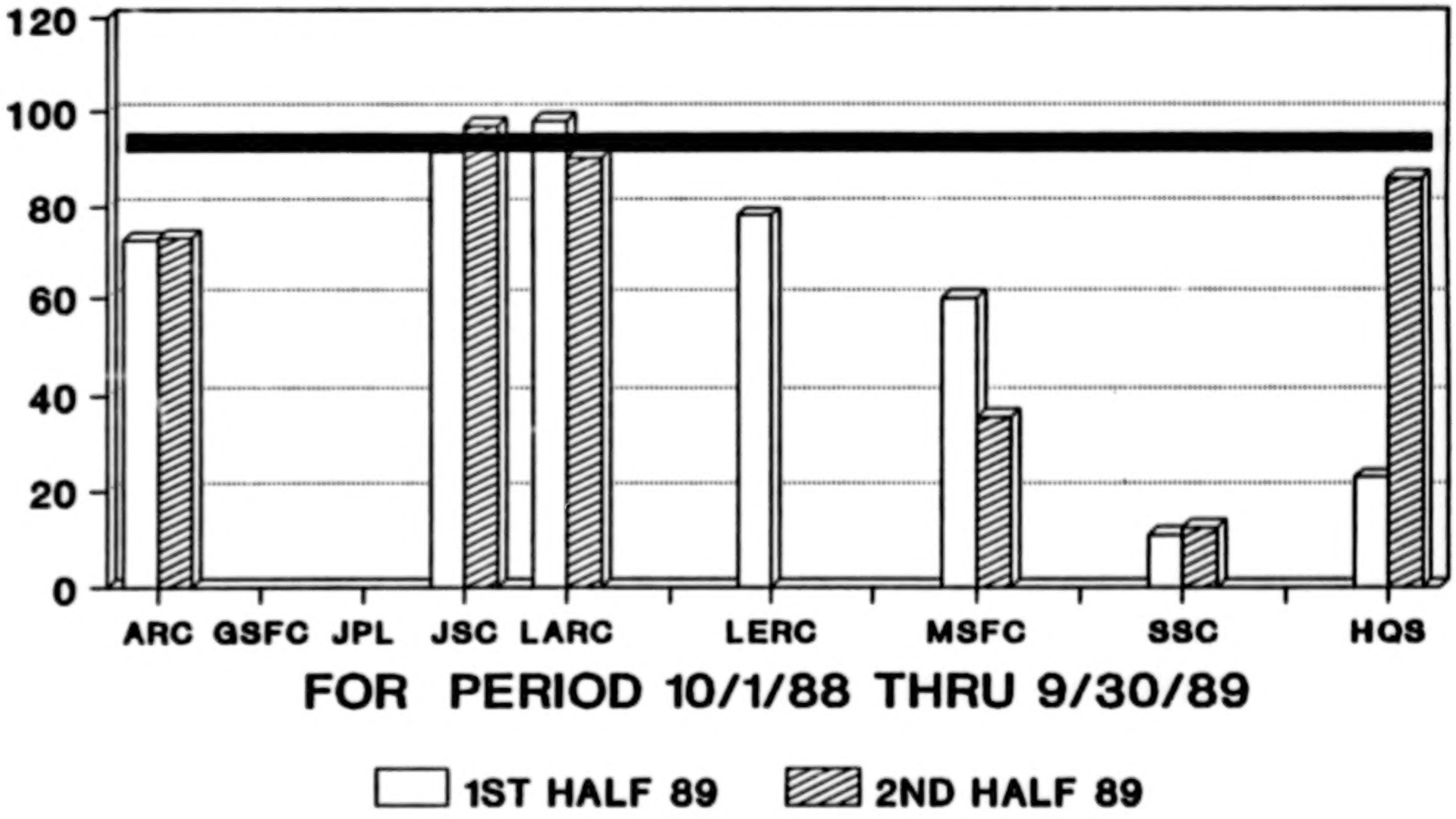
D. Add the totals on B and C, then substract from A. Enter the result here. .... _______

E. Enter the total number of items in the NEMS database. .... _______

F. Divide D by E and multiply by 100 (D/E)x100. This is your equipment loss percentage. .... _______

Performance Measures

Timeliness of Surveys



NASA Standard 95%

be

PERFORMANCE MEASURES: EQUIPMENT MANAGEMENT

REPORTING PERIOD FROM __________ TO __________

5. TIMELINESS OF SURVEYS

NATURE: Number of loss reports completed within 150 days of date of discovery divided by the number of surveys, expressed as a percentage.

SOURCE: Survey Report Register.

METHOD:

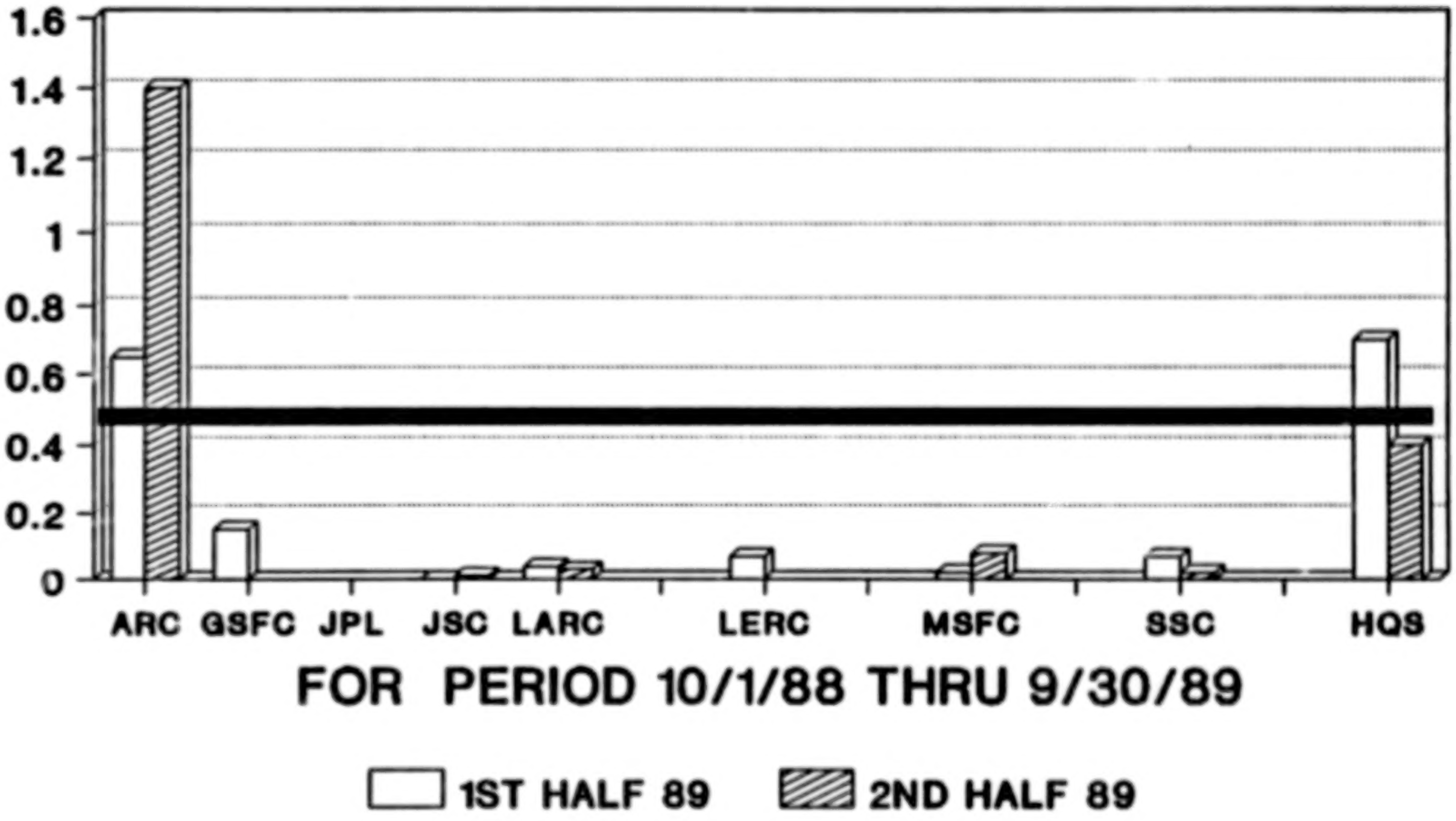
A. From the Survey Report Register, substract each date in the approval column from the date in the discovery column and enter the amount of surveys processed within 150 days. .... ________

B. Enter the total number of surveys submitted. .... ________

C. Divide A by B and multiply by 100 (A/B)x100. This is your timeliness of surveys frequency expressed as a percentage. .... ________

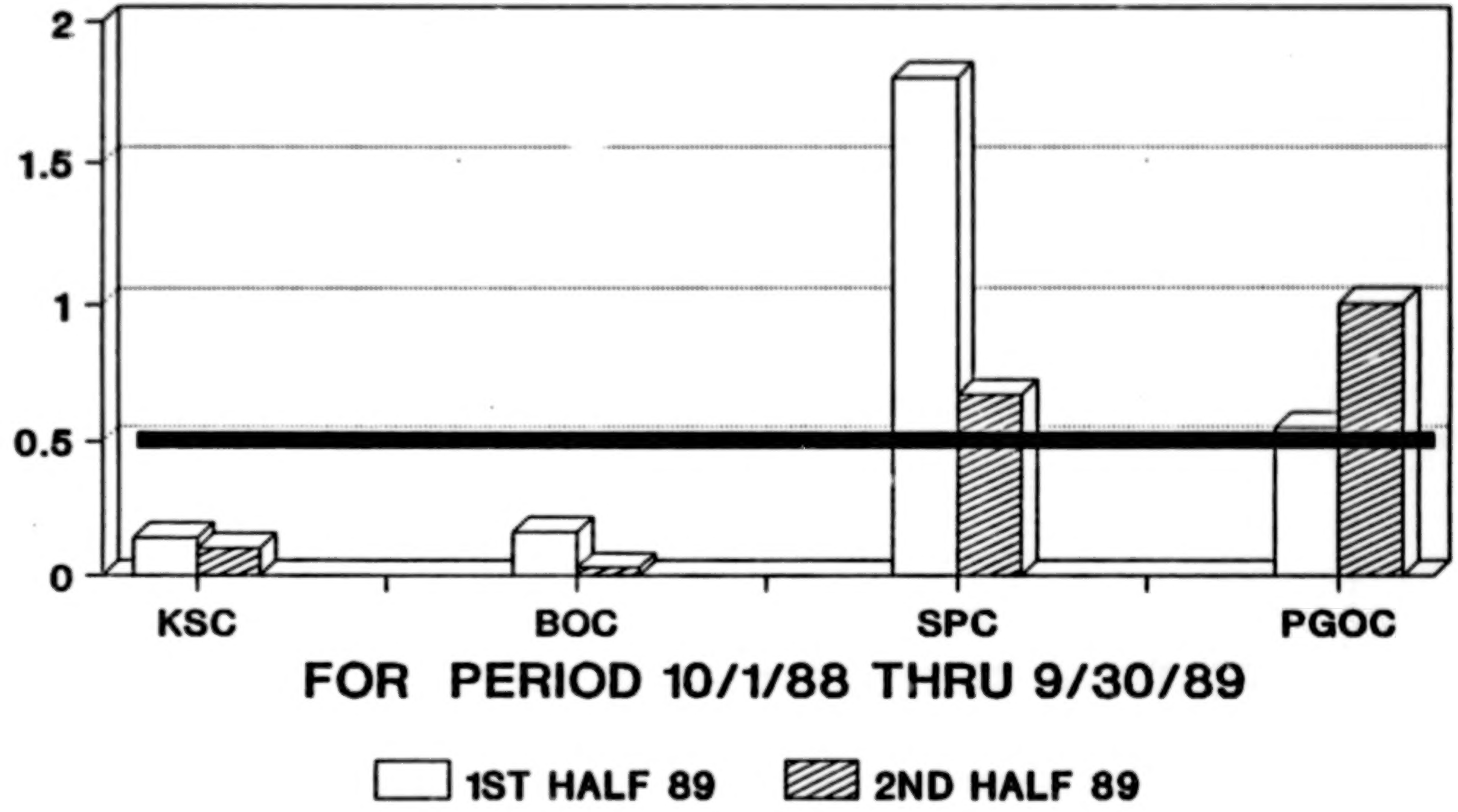
Performance Measures

Found on Station (FOS) Rate



NASA Standard .5%

Performance Measures
Found on Station (FOS) Rate



FOR PERIOD 10/1/88 THRU 9/30/89

NASA Standard .5%

PERFORMANCE MEASURES: EQUIPMENT MANAGEMENT
REPORTING PERIOD FROM __________ TO __________

2. FOUND ON STATION (FOS)

NATURE: FOS's divided by total equipment base, expressed as a percentage.

SOURCE: NEMS

METHOD:

A. Enter and add the number of records on the following ADD transactions:

TR 12 .... __________

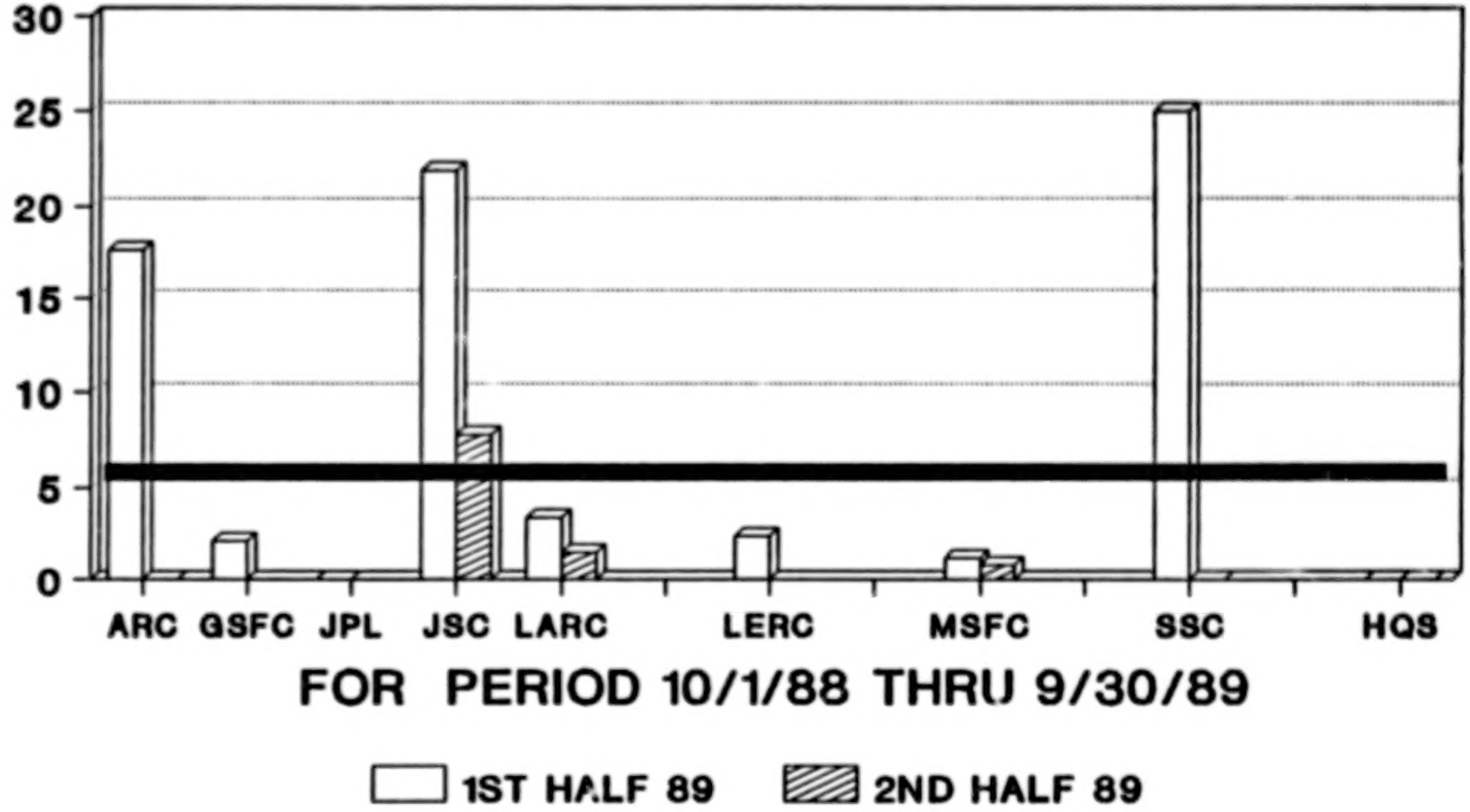
I12 .... __________

Total TRs .... __________

B. Enter the amount of controlled equipment items in the NEMS data base. .... __________

C. Divide the total entered in A by B and multiply by 100 (A/B)x100.
This is your FOS percentage. .... __________

Performance Measures
Inventory Discrepancy Rate

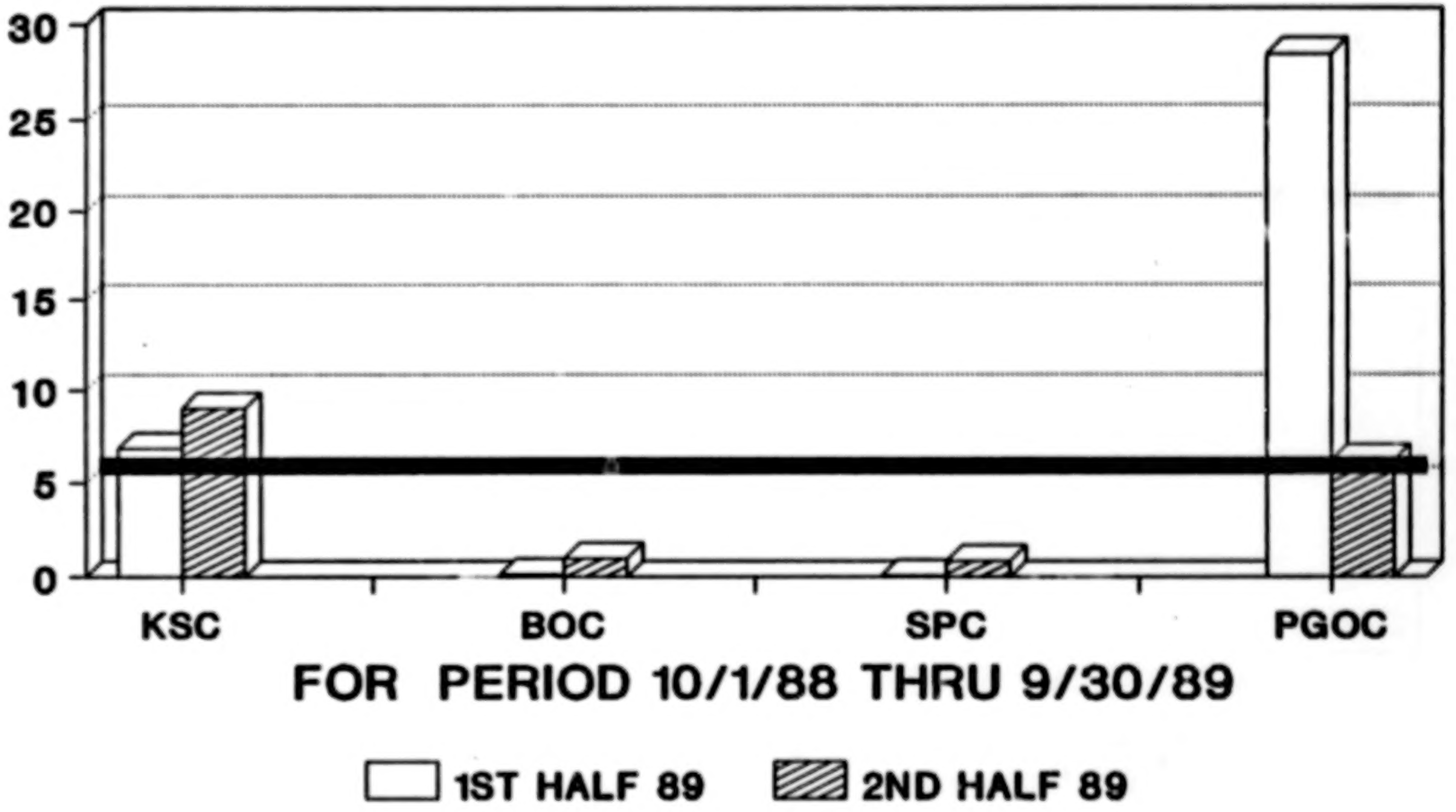


FOR PERIOD 10/1/88 THRU 9/30/89

NASA Standard 6%

Performance Measures

Inventory Discrepancy Rate



FOR PERIOD 10/1/88 THRU 9/30/89

NASA Standard 6%

PERFORMANCE MEASURES: EQUIPMENT MANAGEMENT
REPORTING PERIOD FROM ____________ TO ____________

3. INVENTORY DISCREPANCY RATE

NATURE: Inventory discrepancies adjusted divided by number of items inventoried, expressed as a percentage.

SOURCE: NEMS Inventory Module.

METHOD:

A. Enter the total number of I(inventory) transactions. ________

B. Enter the number of I34s (No change) TRs. .... ________

C. Substract B from A (A-B) and enter the result here. ________

D. Enter the number of items in all closed inventory accounts. .... ________

E. Divide C by D (C/D) and enter the result here. .... ________

F. Multiply E by 100 (Ex100). This is your inventory discrepancy percentage. .... ________

EQUIPMENT MANAGEMENT: ANNUAL STANDARIZED REPORTS

REPORT	REFERENCE	DUE
Performance Measures	Policy Letter	April 1 and September 30
Physical Inventory of Controlled Personal Property	Annual/Triennial (NHB 4200.1C, para 5.302)	April 1
Semiannual Report of Personal Property Management Operations	NF 1324 (NHB 4200.1C, para 1.311)	April 15 and November 15
Equipment Acquisition Document	NF 1511 (NHB 4200.1C, para 2.105)	As Required
NEMS Bar Code Tags FY Forecast	Policy Letter	July 31
Annual Report to Congress	(NHB 4200.1C, para 2.105i)	November 15

Equipment Budget Standards

- What type equipment is being budgeted for?
- Who prepares and monitors budget?
- How are budgeting figures arrived at (process) ?

Property Survey Officer Meeting

- Meeting held at NASA Headquarters on August 29-30, 1989
- 6 sites were represented at the meeting ARC, GSFC, LARC, LERC, MSFC and HQS
- Guest speakers from Office of Inspector General, NASA HQ Security Office and NASA HQ Office of General Counsel
- The meeting resulted in 10 action items and 9 proposals being submitted for consideration

PROPERTY CUSTODIAN MODULE

SUPPLY & EQUIPMENT MANAGEMENT CONFERENCE

KENNEDY SPACE CENTER

DECEMBER 5, 1989

CENTRAL DATA BASE
INTER-CENTER TRANSFERS

CONFIGURATION CONTROL BOARD MEETING

KENNEDY SPACE CENTER

DECEMBER 4, 1989

CENTRAL DATA BASE
INTER-CENTER TRANSFERS

MONDAY	CENTER A TRANSFERS AN ITEM TO CENTER BY USING TRANSACTION 65
MONDAY PM	DATA EXTRACTED DURING OVERNIGHT AND TRANSMITTED TO CDB
TUESDAY AM	TRANSMITTED DATA IS CHECKED AND SET UP FOR OVERNIGHT UPDATING OF CDB
TUESDAY PM	CDB IS UPDATED WITH MONDAY'S DATA, TRANSFER DATA IS SENT TO RECEIVING CENTERS
WED. PM	TRANSFER DATA FROM CDB IS PROCESSED BY RECEIVING CENTER (B)
THURSDAY	CENTER B CAN NOW ADD THE ITEM TO THEIR DATA BASE USING THE TRANSFER DATA

CENTRAL DATA BASE
INTER-CENTER TRANSFERS

MONDAY	*CENTER B ADDS AN ITEM TO THEIR DATA BASE FROM CENTER A (NO TRANSFER DATA)*
MONDAY PM	*DATA EXTRACTED DURING OVERNIGHT AND TRANSMITTED TO CDB*
TUESDAY AM	*TRANSMITTED DATA IS CHECKED AND SET UP FOR OVERNIGHT UPDATING OF CDB*
TUESDAY PM	*CDB IS UPDATED WITH MONDAY'S DATA, CENTER B ADD IS NOT A DUPLICATE*
SOMETIME LATER	*CENTER A DELETES THE ITEM*

CENTRAL DATA BASE
INTRA-CENTER TRANSFERS

ADD TRANSACTION	DELETE TRANSACTION
04	65
06	68
07	67

THE ADD TRANSACTION WILL FIRST CHECK THE HISTORY FILE FOR THE COMPLEMENTARY DELETE TRANSACTION. IF ONE IS NOT FOUND THE TRANSFER FILE WILL BE CHECKED.

NEMS CATALOGING

EQUIPMENT MANAGEMENT WORKSHOP

KENNEDY SPACE CENTER
DECEMBER 5, 1989

NEMS CATALOGING

MANUFACTURER CODES

- CONTACT NEMS CENTRAL CATALOGER FTS 453-8517 FOR ASSIGNMENT OF MANUFACTURER CODE. HAVE THE FOLLOWING INFORMATION AVAILABLE: (1) COMPLETE MANUFACTURER NAME (2) LOCATION OF MANUFACTURER-CITY, STATE (3) ITEM NAME (4) MODEL NUMBER.

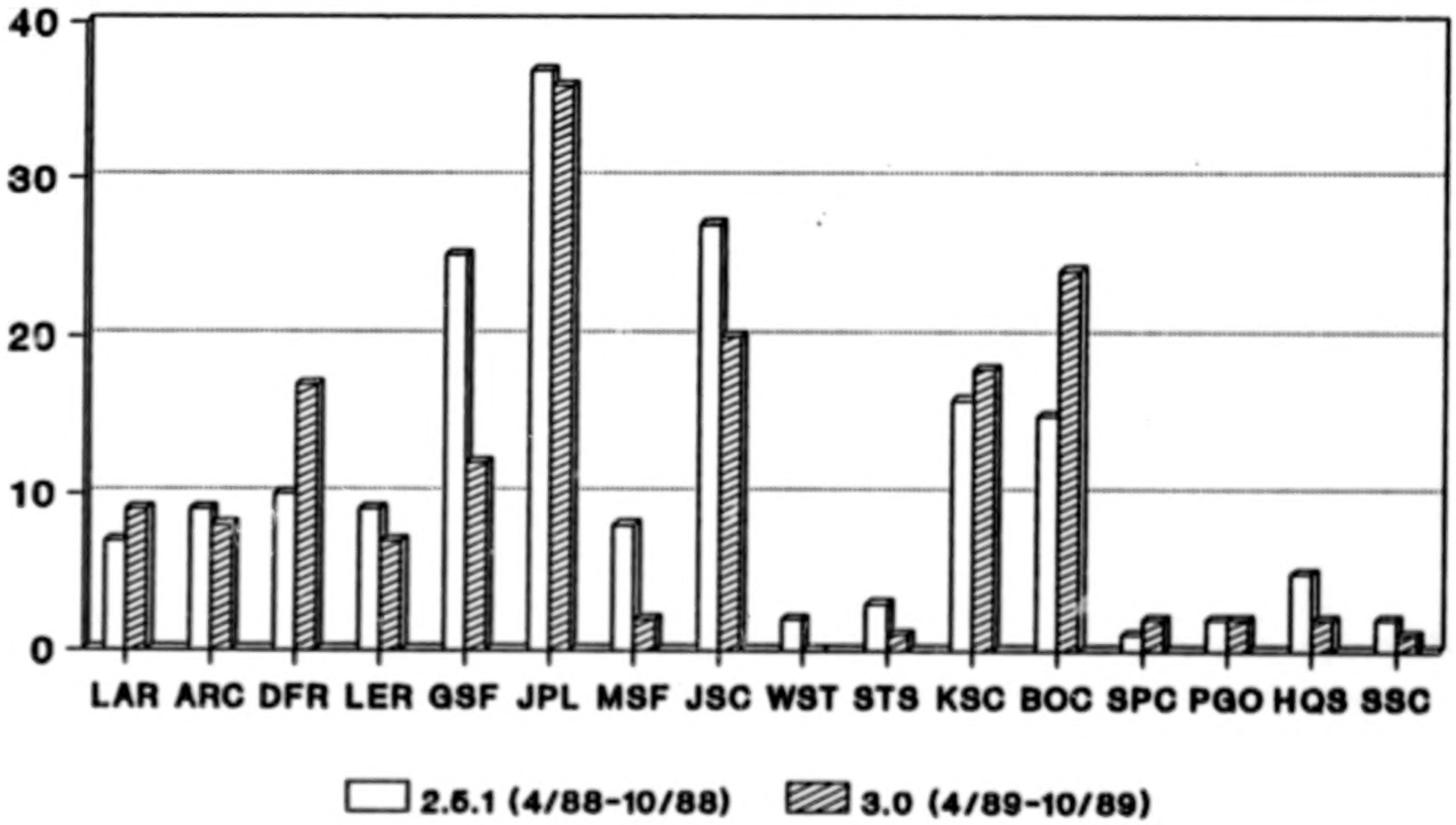
- NO ASSIGNMENT OF MANUFACTURER CODE WITHOUT LOCATION (CITY, STATE).

- ENCOURAGE PHONE USE TO CONTACT VENDORS AND MANUFACTURERS FOR PRODUCT INFORMATION.

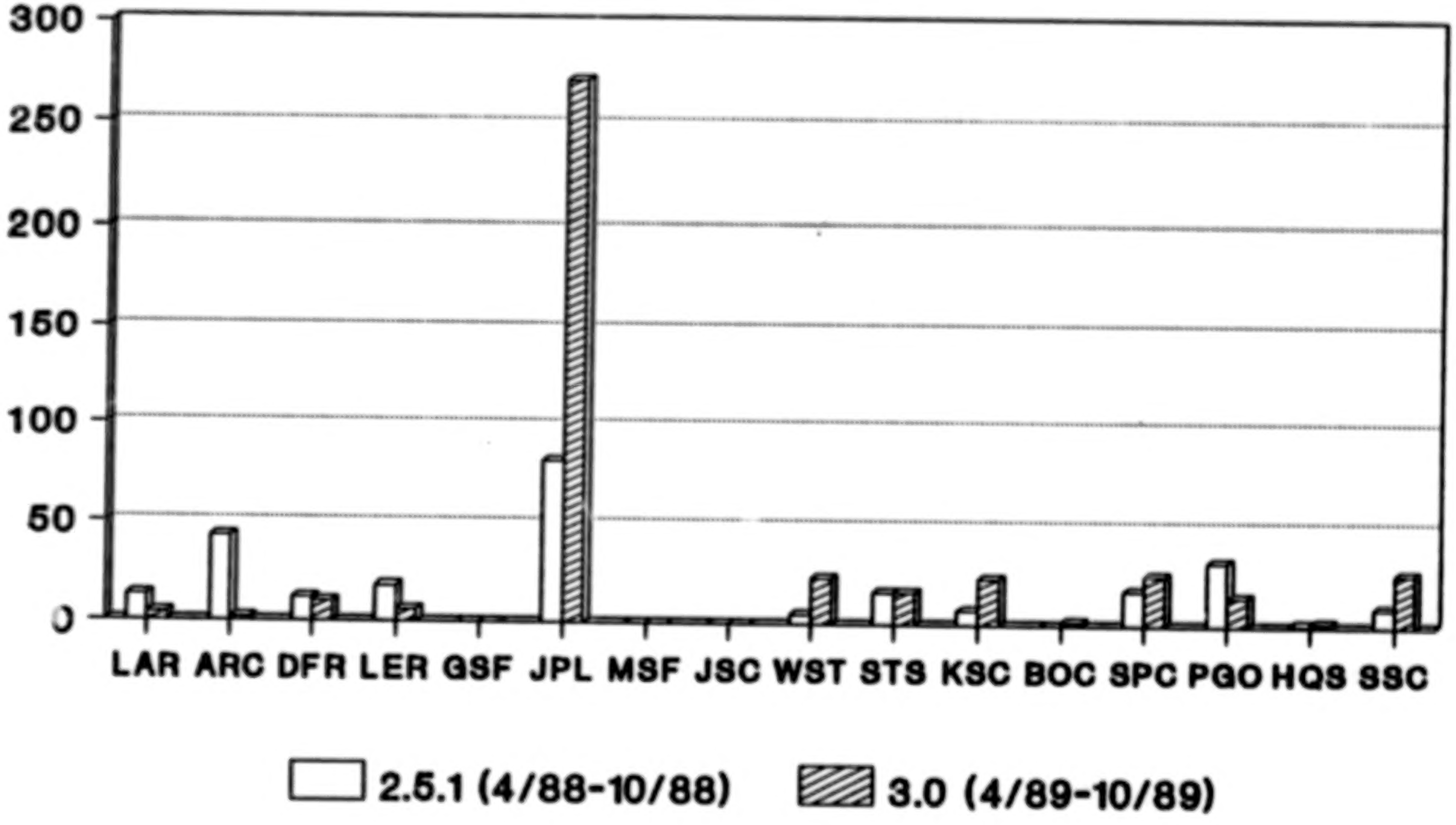
- IN LIEU OF USING 'XXXXX' ENTRIES FOR MANUFACTURER WITHOUT AN ASSIGNED CODE, CONTACT NEMS CENTRAL CATALOGER FTS 453-8517 FOR ASSIGNMENT OF CODE.

NEMS CATALOGING

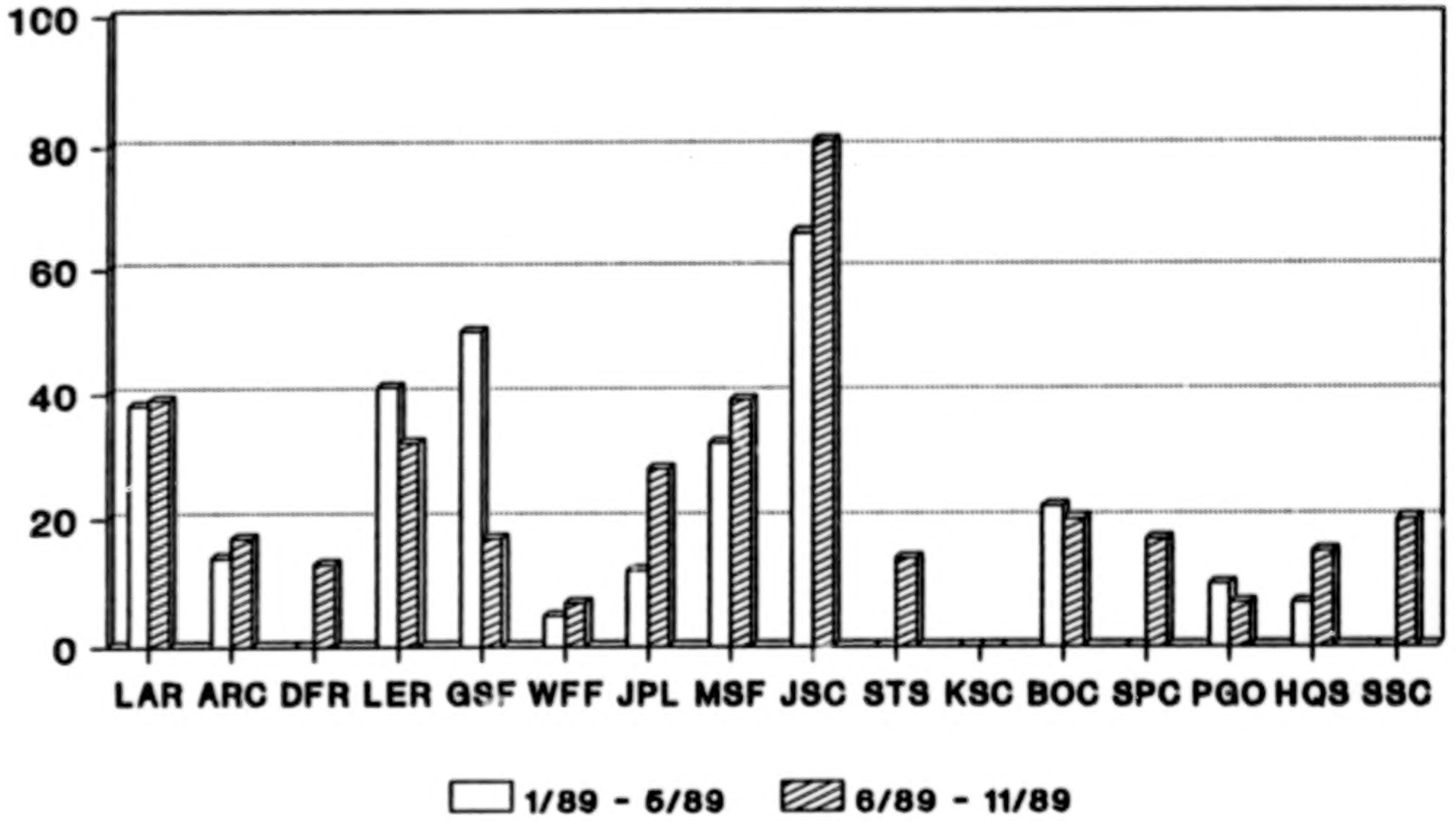
INVALID MFG CODES



NEMS CATALOGING
'XXXXX' ENTRIES - MFG CODE



NEMS CATALOGING
CALL-IN REQUESTS FOR MFG CODES

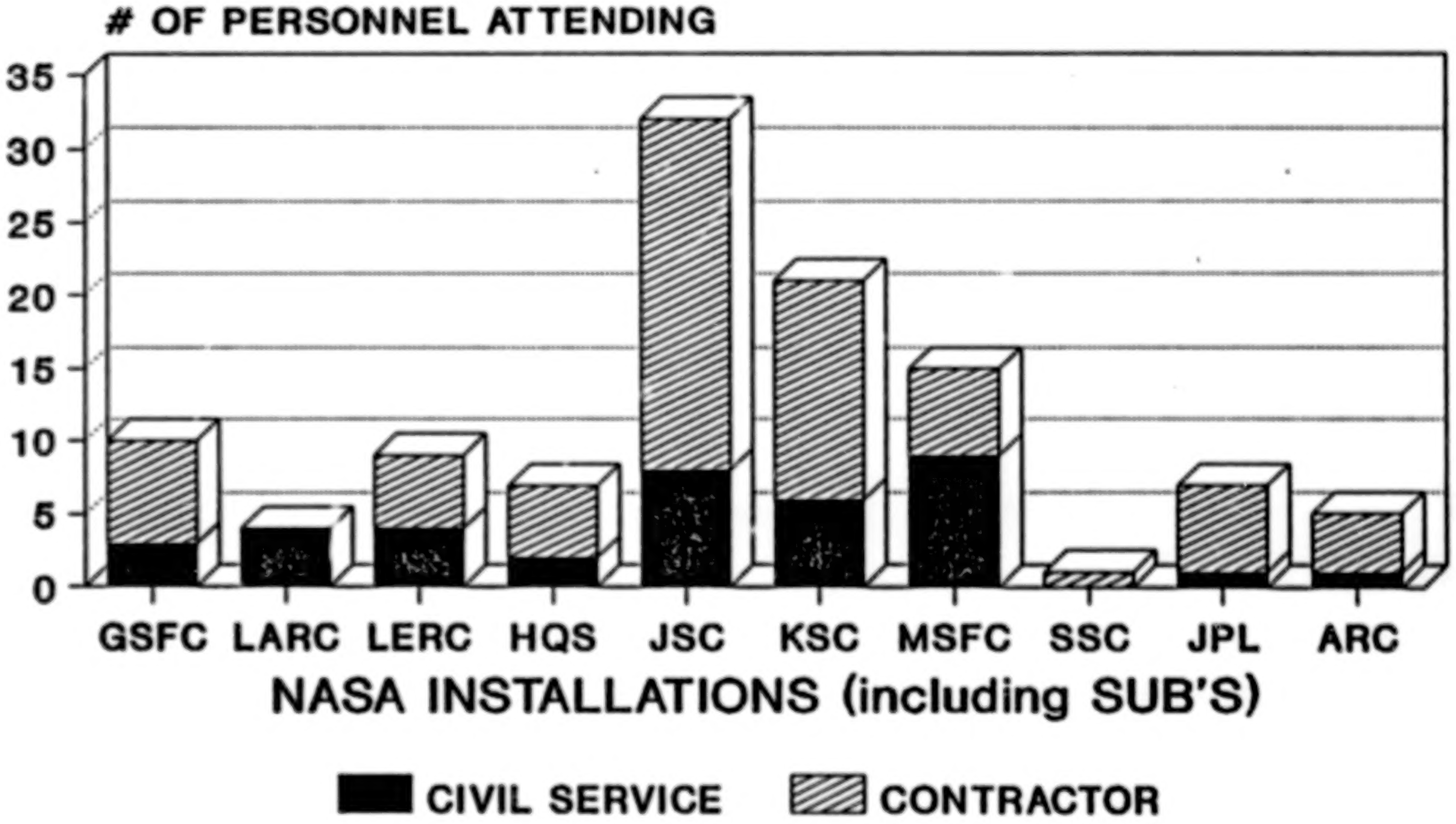


MFG CODE TABLE REVIEW STATUS

Total Mfg Codes (CAGE & NASA-assigned)	16,826
NASA-assigned Codes (to be reviewed for valid CAGE)	5153
NASA-assigned Codes reviewed (11-30-89)	893
NASA-assigned Codes converted to valid CAGE Codes	86
'Hit Rate'	10%
Remaining NASA-assigned Codes to be reviewed for valid CAGE Codes (11-30-89)	4260

- This task would be expedited with proposed acquisition of CD-ROM along with 'FED-LOG' compact disc containing H4/H8 CAGE directory.

CATALOGING TRAINING
JUNE 1989



•IMPROVEMENT OF MODEL NO,ITEM NAME INPUT

INSTALLATION NEMS CATALOGER

- REVIEWS AND STANDARDIZES ITEM NAMES, MFG CODES AND MODEL NUMBERS.

- EACH CENTER: PLEASE IDENTIFY YOUR CATALOGER.

STANDARDIZED ITEM NAME

CENTRAL DIRECTORY

- USE CENTRAL DATA BASE AS THE STANDARDIZED ITEM NAME DIRECTORY

- ESTABLISH PROGRAM TO DISSEMINATE STANDARDIZED ITEM NAMES TO CENTERS MORE FREQUENTLY

COMPACT DISC READ ONLY MEMORY
(CD-ROM)

- CD-ROM: AN OPTICAL MEDIA WHICH WILL ENABLE LOGISTICIANS TO ACCESS FEDERAL CATALOG SYSTEM (FSC) DATA UTILIZING THE POWER AND PRODUCTIVITY OF A PERSONAL COMPUTER.

- ACCESS THE FOLLOWING PUBLICATIONS:
  - ✓ COMMERCIAL AND GOVERNMENT ENTITY CODES (H4/H8)
  - ✓ FEDERAL ITEM NAME DATA (H6)
  - ✓ FEDERAL SUPPLY CLASSIFICATION (H2)

- AVAILABLE ON FEDERAL SUPPLY SCHEDULE GSOOF-01486, NSN 7025-01-272-5039, COST $1995.00 EA.

3.0 RELEASE

- ON A CHANGE TRANSACTION TC60, CENTERS *CANNOT* CHANGE AN ITEM NAME THAT HAS BEEN STANDARDIZED.

- ERROR MESSAGE 139: *ITEM NAME HAS BEEN STANDARDIZED AND MUST NOT BE CHANGED.*

- IF A CONFLICT ARISES OVER THE STANDARDIZED ITEM NAME, COMMENTS MUST BE SUBMITTED FOR CONSIDERATION TO CODE NIE, ATTN: MANAGER, EQUIPMENT PROGRAMS.

AUTOMATED INFORMATION MANAGEMENT

(AIM) SYSTEM

INTERFACE CONSIDERATIONS

SUPPLY AND EQUIPMENT
CONFERENCE MANAGEMENT
KENNEDY SPACE CENTER

BETSY SIRK
PROGRAM TECHNICAL MANAGER
DECEMBER 5, 1989

PRESENTATION OVERVIEW

- INTERFACE PROBLEMS

- SOLUTIONS

- SUMMARY

INTERFACE PROBLEMS

- CHANGE TO ONE SYSTEM MAY IMPACT ANOTHER WHEN DATA ELEMENTS ARE SHARED BY TWO OR MORE SYSTEMS

- INFORMATION ABOUT ANY GIVEN SYSTEM NOT READILY AVAILABLE TO DEVELOPERS AND USERS OF ANOTHER SYSTEM

SOLUTIONS

- ESTABLISH A DATA ADMINISTRATION PROGRAM TO:
  - DEFINE APPROVAL PROCESS FOR SYSTEM CHANGES THAT AFFECT OTHER SYSTEMS
  - DEVELOP FILE AND DATA ELEMENT NAMING STANDARDS
  - DEVELOP OF GLOBAL DATA DICTIONARY
- OTHER SOLUTIONS
  - COOPERATION AMONG CONFIGURATION CONTROL BOARDS AND OTHER PROJECT ACTIVITIES
  - COORDINATION OF RELEASE SCHEDULES AMONG AIM SYSTEMS

SUMMARY

- COMPLEX PROBLEM
  - MULTIPLE ORGANIZATIONS AND SYSTEMS INVOLVED
  - MULTIPLE ITEMS TO CONTROL, EG. DATA, RELEASES, STANDARDS
- MORE CAN BE DONE NOW TO ALLEVIATE PROBLEM
- YOUR FEEDBACK IS CRITICAL

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE
ARE WE BUDGETING FUNCTIONS PROPERLY?

BUDGET SUBFUNCTION	SUPPLIES	EQUIPMENT
FOR EXAMPLE		
FACILITY MAINTENANCE		
EQUIPMENT MAINTENANCE		
ADP MAINTENANCE		
ADP EQUIP/LEASE/PURCHASE		
PHOTO SERVICES		
GRAPHICS		
PRINTING AND REPO.		
GEN. PURPOSE MOTOR VEH.		
INTERAGENCY MOTOR POOL		
AIRCRAFT OPERATIONS		
ADMIN EQUIP/LEASE/PURCHASE		
OFFICE FURNITURE		

Equip

NASA
PROGRAM SUPPORT
COMMUNICATIONS NETWORK

BOEING COMPUTER SUPPORT SERVICES
MARSHALL SPACE FLIGHT CENTER
HUNTSVILLE, ALABAMA

22ND ANNUAL S&EM CONFERENCE

MEL POTTS, BOEING PROPERTY MANAGER
HELEN KENNAMER, BOEING INVENTORY CONTROL

Program Support Communications Network

AGENDA

- Overview of PSC Network - Mel
- PSCN Equipment Statistics - Helen
- Special Property Management topics - Mel
- General Discussion - Open

Program Support Communications Network

OVERVIEW OF PSC NETWORK

Program Support Communications Network

DESCRIPTION

PSCN is a long-distance, common-user, digital telecommunications network that provides these services to NASA:

- **Voice communications**
- **Data communications**
- **Message services (electronic mail)**
- **Video teleconferencing**
- **Facsimile services**

Program Support Communications Network

ELEMENTS

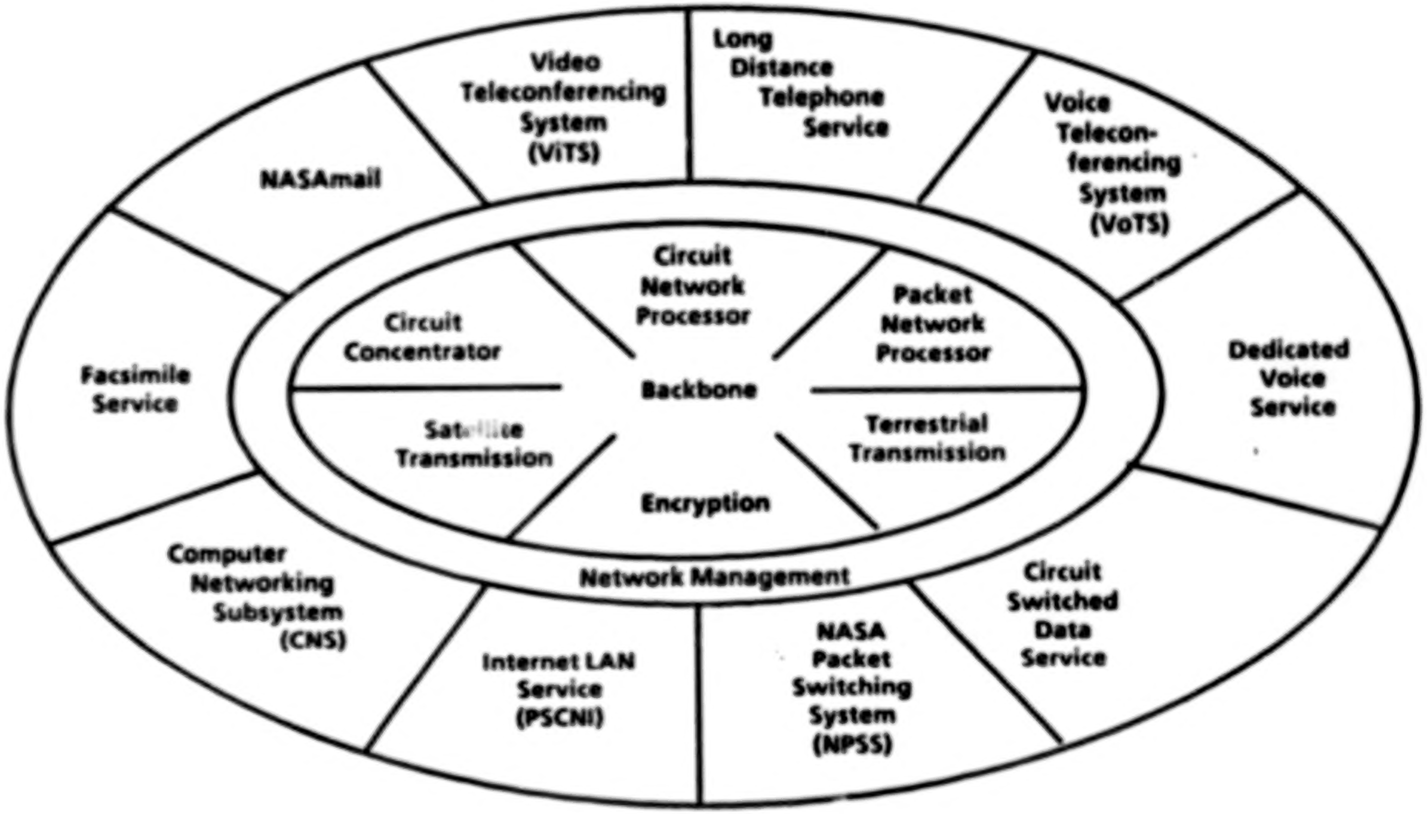
PSCN is composed of the following components:

- Gateways
- Tail circuits
- Satellite system
- Terrestrial system
- Network Control Center
- Network Management System
- Communications Resource Facility
- End-user services
- 17 gateway locations

343

Program Support Communications Network

NASA PSC SERVICES SHARING THE BACKBONE NETWORK


Video Teleconferencing System (ViTS)

Long Distance Telephone Service

Voice Teleconferencing System (VoTS)

Dedicated Voice Service

Circuit Switched Data Service

NASA Packet Switching System (NPSS)

Internet LAN Service (PSCNI)

Computer Networking Subsystem (CNS)

Facsimile Service

NASAmail

Network Management

Circuit Network Processor

Packet Network Processor

Terrestrial Transmission

Encryption

Satellite Transmission

Circuit Concentrator

Backbone

NASA-PSC

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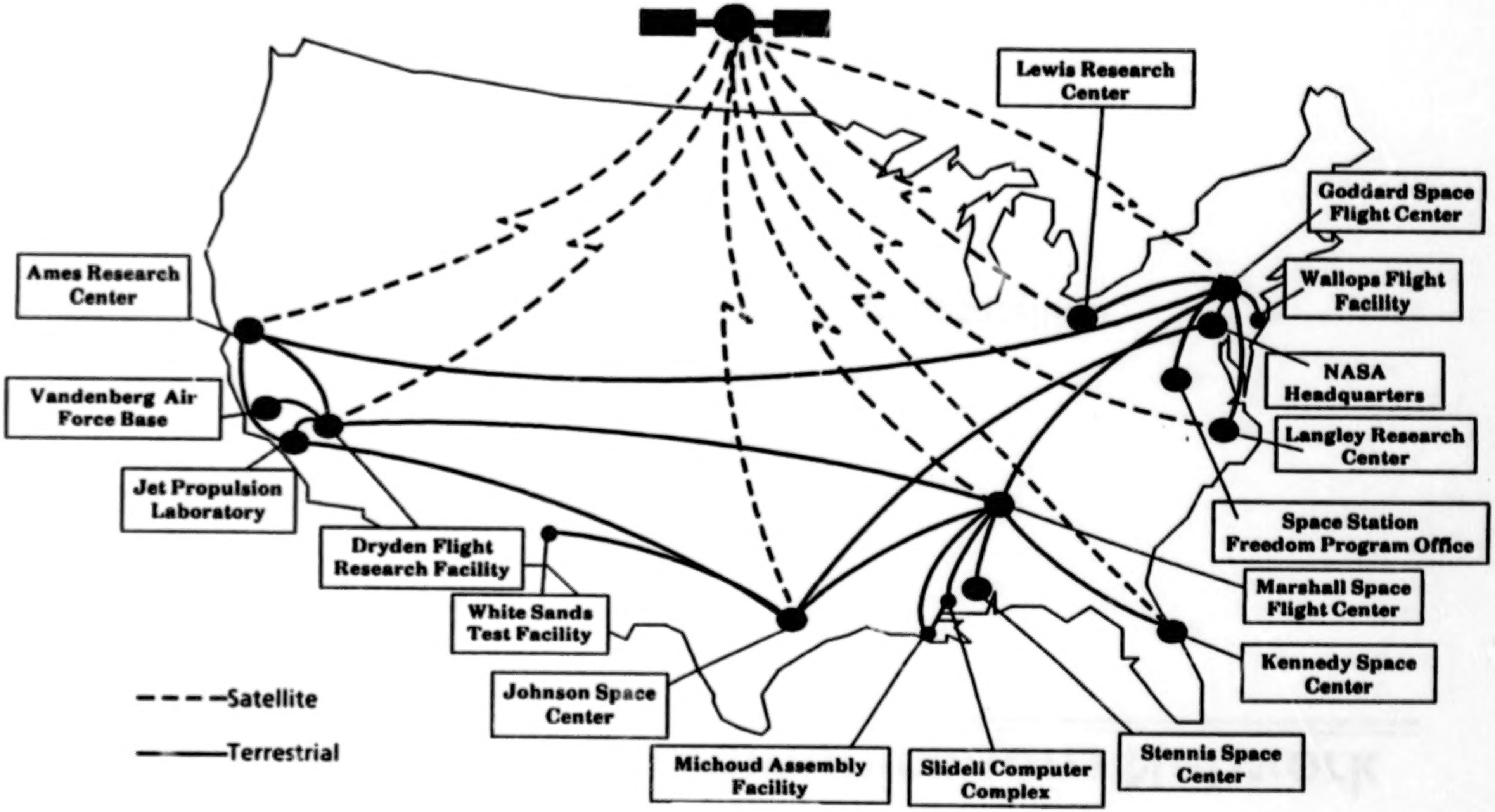
sp

Program Support Communications Network

ELEMENTS (CONT)

- 1500 directly monitored devices
- 5000 indirectly monitored devices
- 60 Mbps time division multiple access satellite
- 8 earth stations
- 80 terrestrial T-1 main circuits

Program Support Communications Network



Lewis Research Center

Goddard Space Flight Center

Wallops Flight Facility

NASA Headquarters

Langley Research Center

Space Station Freedom Program Office

Marshall Space Flight Center

Kennedy Space Center

Stennis Space Center

Slidell Computer Complex

Michoud Assembly Facility

Johnson Space Center

White Sands Test Facility

Dryden Flight Research Facility

Jet Propulsion Laboratory

Vandenberg Air Force Base

Ames Research Center

- - - -Satellite

———Terrestrial

NASA-PSC

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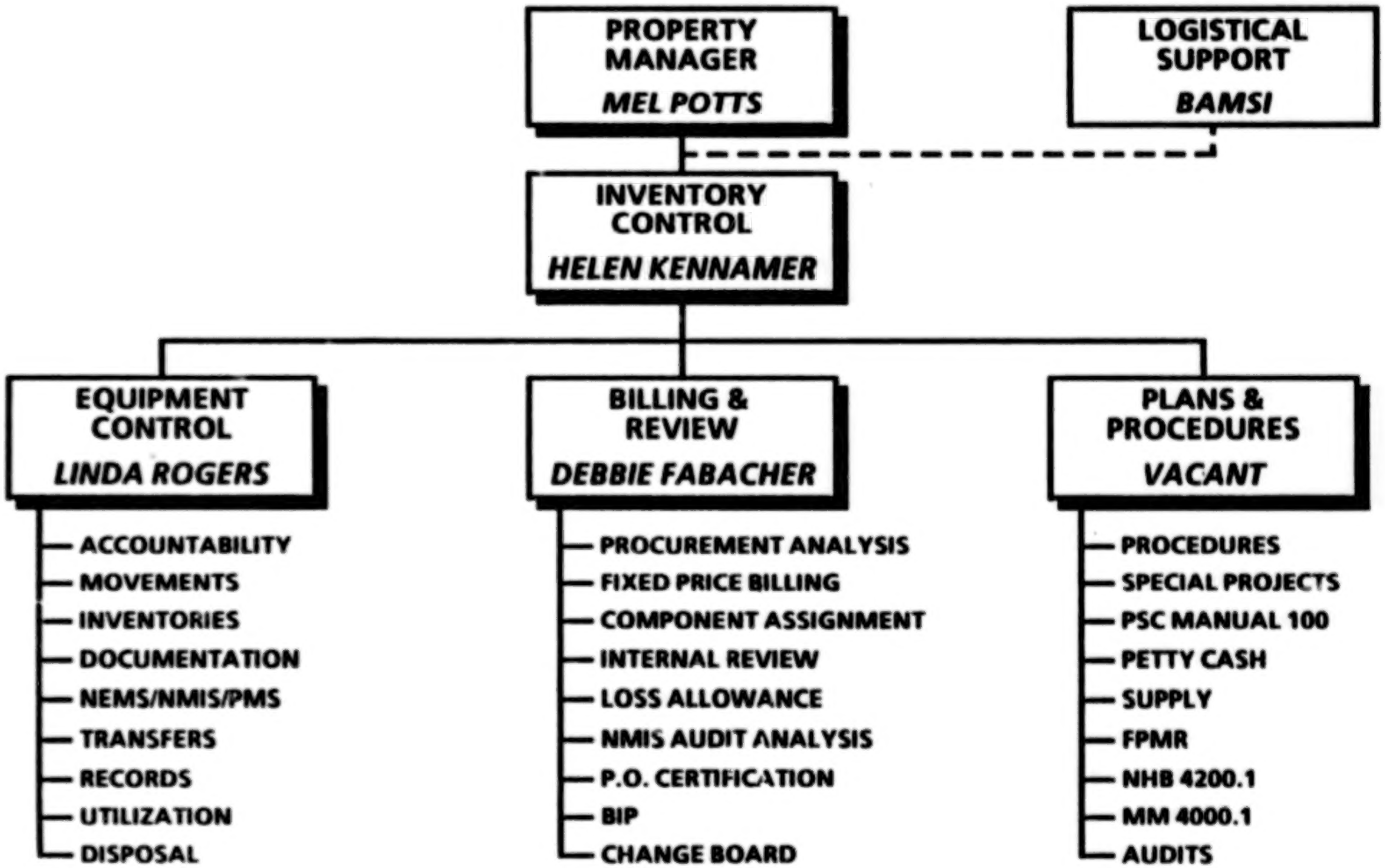
Program Support Communications Network

BOEING-BAMSI PSC PROPERTY MANAGEMENT



PROPERTY MANAGER
MEL POTTS

LOGISTICAL SUPPORT
BAMSI

INVENTORY CONTROL
HELEN KENNAMER

EQUIPMENT CONTROL
LINDA ROGERS

- ACCOUNTABILITY
- MOVEMENTS
- INVENTORIES
- DOCUMENTATION
- NEMS/NMIS/PMS
- TRANSFERS
- RECORDS
- UTILIZATION
- DISPOSAL

BILLING & REVIEW
DEBBIE FABACHER

- PROCUREMENT ANALYSIS
- FIXED PRICE BILLING
- COMPONENT ASSIGNMENT
- INTERNAL REVIEW
- LOSS ALLOWANCE
- NMIS AUDIT ANALYSIS
- P.O. CERTIFICATION
- BIP
- CHANGE BOARD

PLANS & PROCEDURES
VACANT

- PROCEDURES
- SPECIAL PROJECTS
- PSC MANUAL 100
- PETTY CASH
- SUPPLY
- FPMR
- NHB 4200.1
- MM 4000.1
- AUDITS

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Program Support Communications Network

PSC SITE REPRESENTATIVES

NASA SITE	CONTACT
AMES RESEARCH CENTER VANDENBERG AIR FORCE BASE (415) 694-4016 LDTS 464-4016	MILO BURGESS Mail Code 233-18 Bldg. 233, Rm. 255 Moffett Field, CA 94035
DRYDEN FLIGHT FACILITY (805) 258-3523 LDTS 961-3523	PAMELA BEER Bldg. 4838, Rm. 205 Edwards, CA 93523-5000
GODDARD SPACE FLIGHT CENTER WALLOPS FLIGHT FACILITY (301) 286-8501 LDTS 888-8501	PHIL JONES Mail Code 543 Bldg. 12, Rm. E-133A Greenbelt, MD 20771
NASA HEADQUARTERS (202) 453-1764 LDTS 452-1764	MICHAEL SHEEHAN FOB 10B Rm. A26 600 Independence Ave., SW Washington, DC 20546
JET PROPULSION LABORATORY (818) 354-0150 LDTS 792-0150	GENE BREAZIER Mailstop 202-209 Bldg. 241, Rm. 207 4800 Oak Grove Dr. Pasadena, CA 91109
JOHNSON SPACE CENTER WHITE SANDS TEST FACILITY (713) 483-7544 LDTS 525-7544	BILL RAMEY Mail Code FD Bldg. 17, Rm. 117 2101 NASA Road 1 Houston, TX 77058

NASA-PSC

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Program Support Communications Network

PSC SITE REPRESENTATIVES

NASA SITE	CONTACT
KENNEDY SPACE CENTER (407) 867-7726 LDTS 823-7726	LARRY GRIMES HQ. Bldg., Rm. 3118 KSC, FL 32899
LANGLEY RESEARCH CENTER (804) 864-7647 LDTS 928-7647	CHARLES RUSSELL Mail Stop #296 Bldg. 1213, Rm. 139 Hampton, VA 23665
LEWIS RESEARCH CENTER (216) 433-5199 LDTS 297-5199	JOSEPH McMILLEN Mail Stop 302-1 Bldg. 322 21000 Brookpark Rd. Cleveland, OH 44135
MICHOUD ASSEMBLY FACILITY SLIDELL COMPUTER COMPLEX STENNIS SPACE CENTER (504) 646-7208 LDTS 680-7208	LES RIDAUGHT Bldg. 902, Rm. 138 1010 Gause Blvd. Slidell, LA 70458
MARSHALL SPACE FLIGHT CENTER (205) 461-4703 LDTS 824-6866	ED KROM Bldg. 4207, Rm. 111 MSFC, AL 35812
SPACE STATION FREEDOM PROJECT OFFICE (703) 487-7134 LDTS 457-7134	DENNIS HYDE NASA Code SSO Room 1417 10701 Parkridge Blvd. Reston, VA 22091-4398

NASA-PSC

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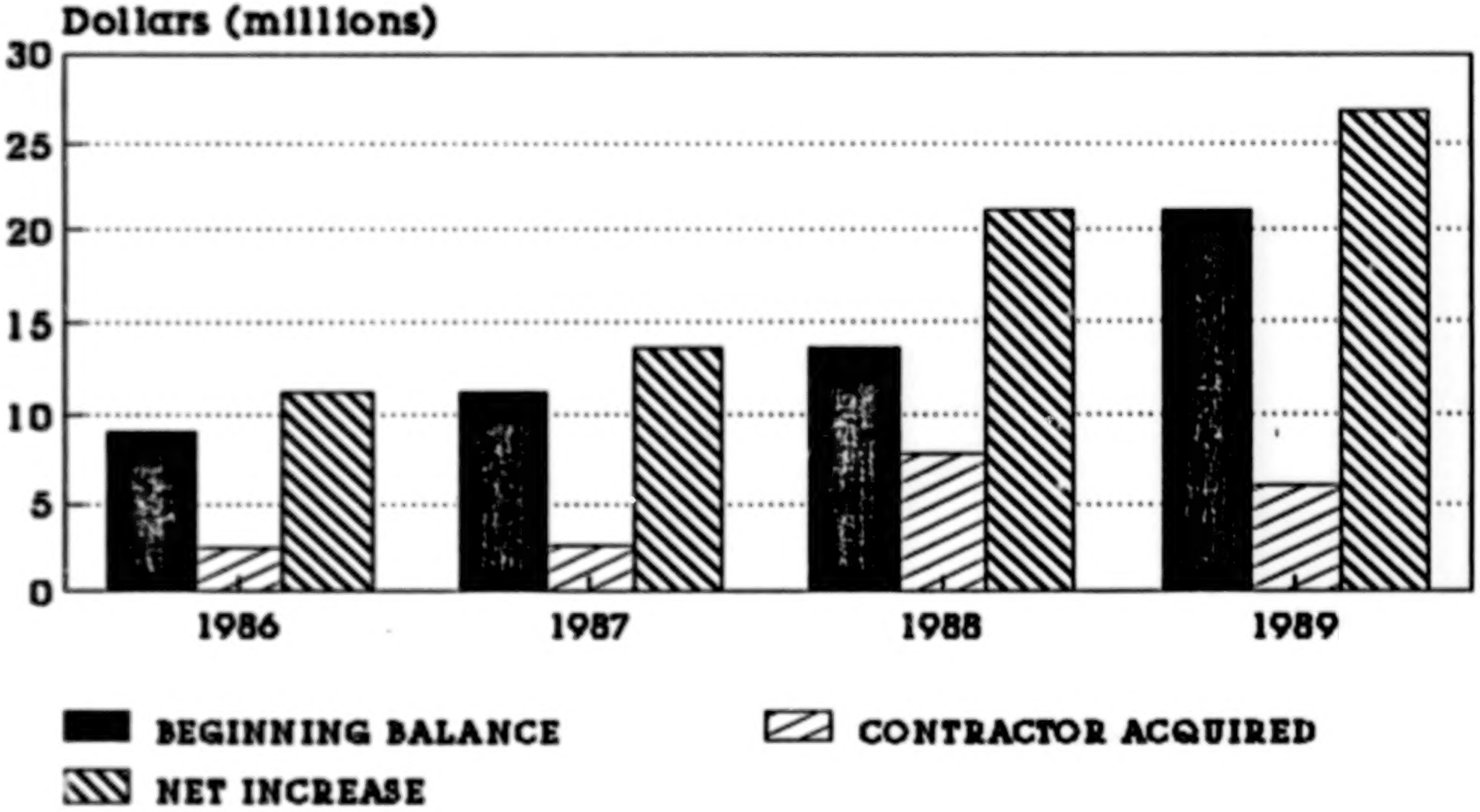
Program Support Communications Network

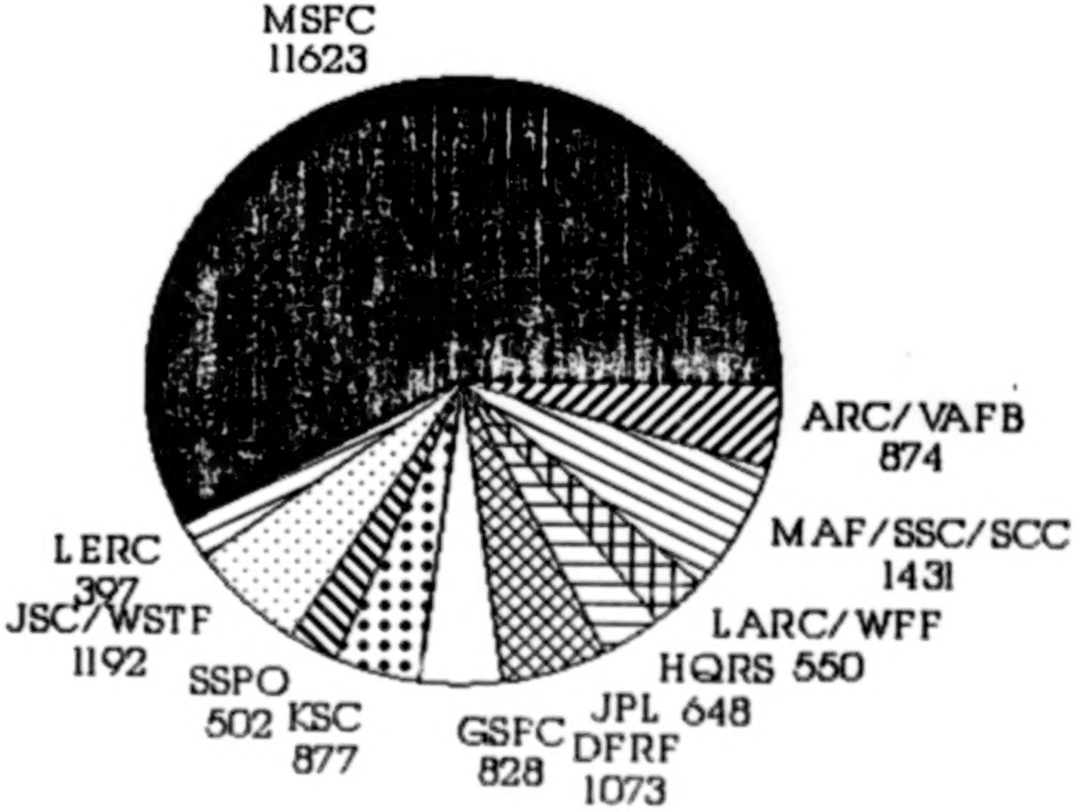
PSCN EQUIPMENT STATISTICS

PSC NASA EQUIPMENT
CONTRACTOR ACQUIRED



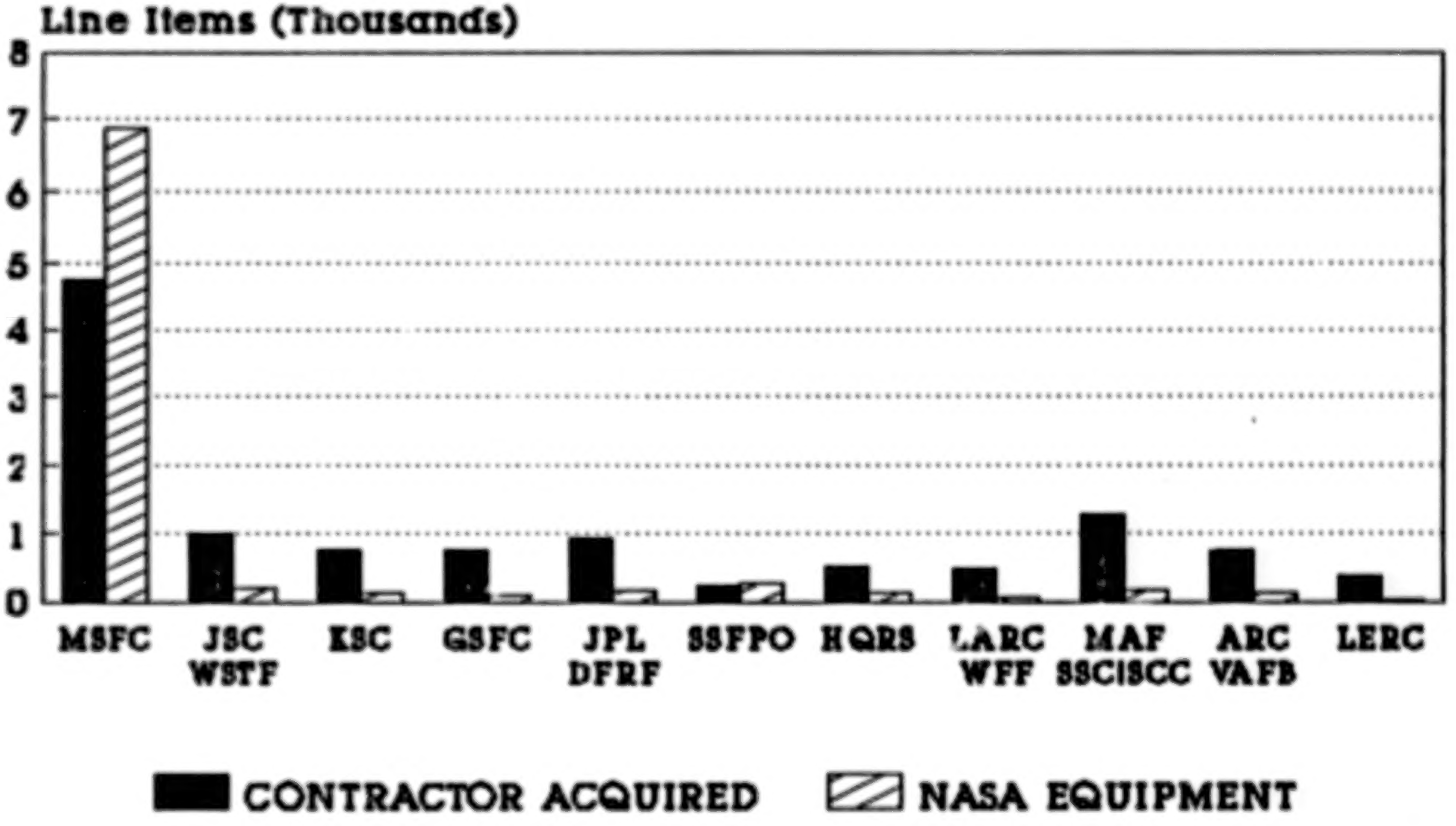
PSC PROPERTY MANAGEMENT

EQUIPMENT BY LOCATION



NOVEMBER 1989

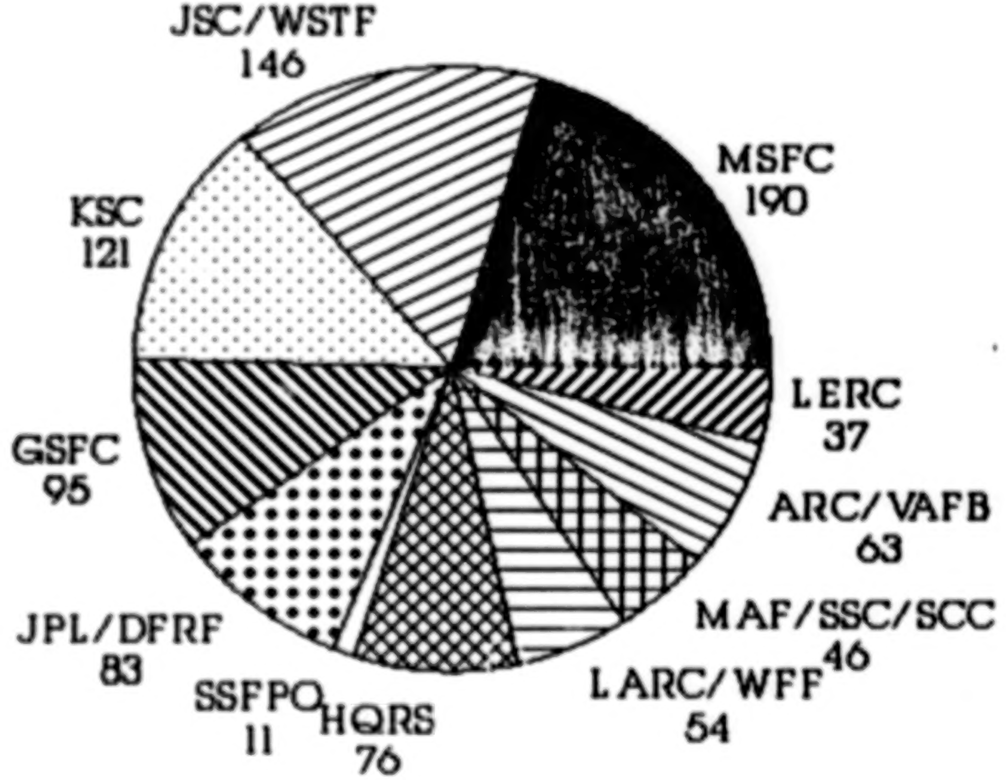
PSC INVENTORY DISTRIBUTION
NASA AND C/A EQUIPMENT



NOVEMBER 1989

PSCN FACSIMILE MACHINES

NASA CENTER DISTRIBUTION



922 MACHINES 11/1/89

Program Support Communications Network

SPECIAL PROPERTY MANAGEMENT TOPICS

Program Support Communications Network

BOEING & NEMS EQUIPMENT TAGS

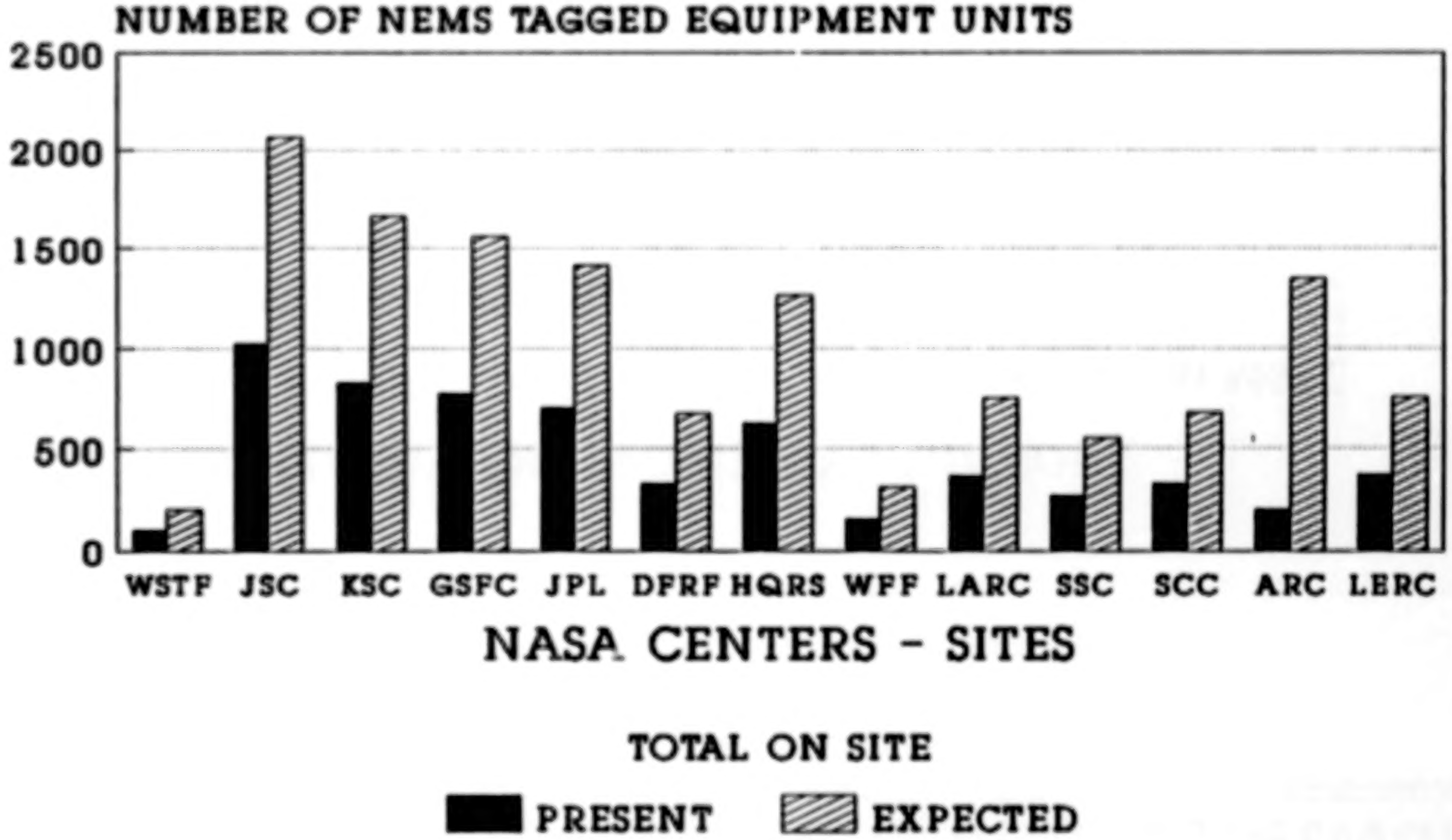
- Present Boeing tags will be replaced with new NEMS "Installment-Sales" tags
- NEMS tags are placed on all CPAF-controlled equipment items

Program Support Communications Network

ACCOUNTABILITY AND INVENTORY SITUATIONS

- Accountability of all PSCN equipment remains at MSFC
- No NEMS transfer/borrow-out transactions are accomplished
- Inventory overages will occur

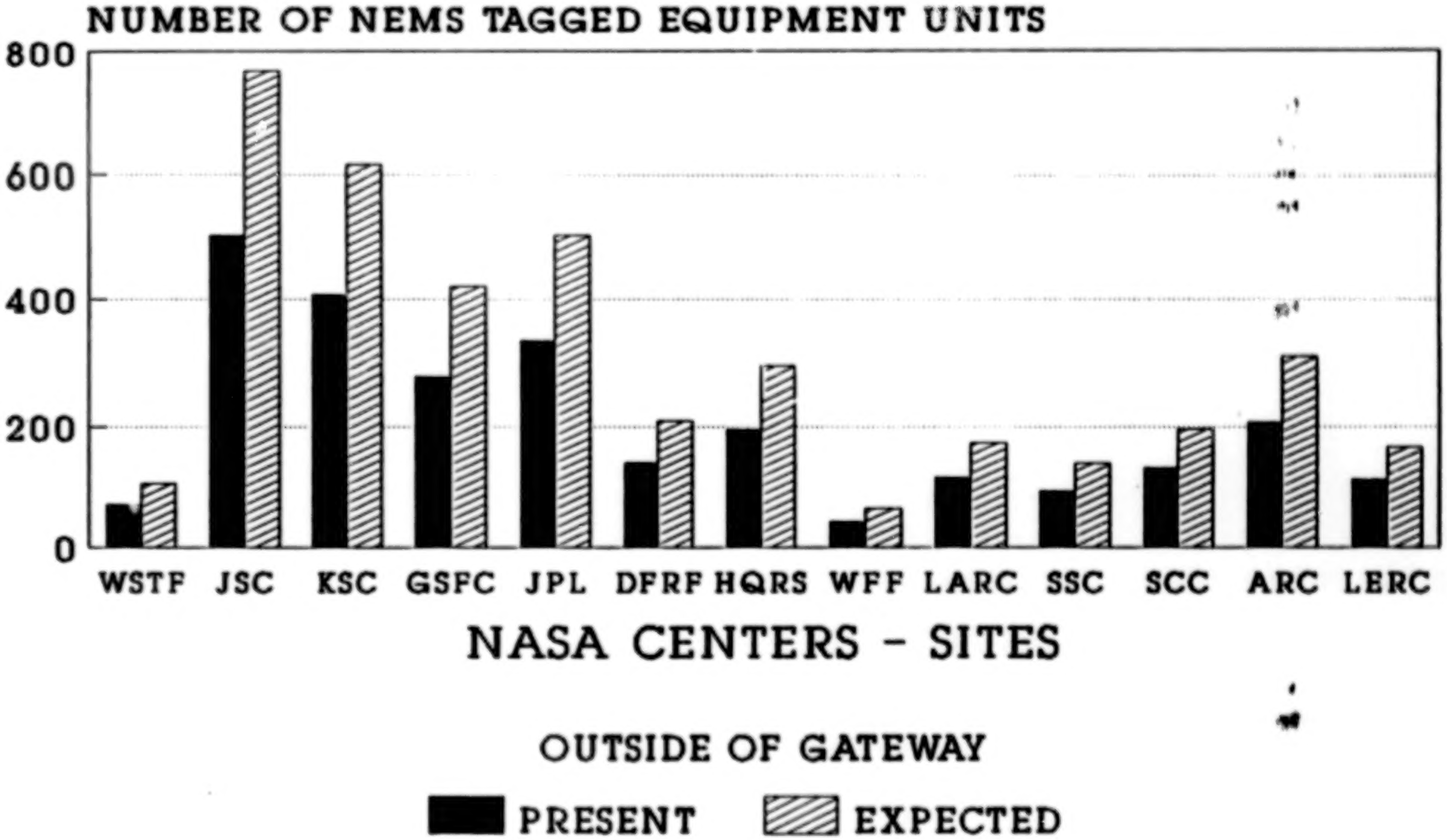
PSC INVENTORY DISTRIBUTION
PROJECTED GROWTH FROM 1990 TRANSFER



NOVEMBER 1989

PSC INVENTORY DISTRIBUTION

PROJECTED GROWTH FROM 1990 TRANSFER



NOVEMBER 1989

CONTRACT PROPERTY WORKSHOP

Billie Wilcbok

CONTRACT PROPERTY WORKSHOP

WEDNESDAY, DECEMBER 6, 1989
2:30 - 4:30 p.m.

COCOA BEACH HILTON
SAWGRASS ROOM

CONTRACT PROPERTY WORKSHOP SCHEDULE

2:30 p.m. FAR Facilities Policy

Contractor Acquisitions

- CO Consent
- Screening

CONTRACT PROPERTY WORKSHOP SCHEDULE (CONTINUED)

3:15 p.m. IPGP Contracts

- Transfer to Center
- Reporting to NEMS

On-site Accountable (FAR 45.5) Contracts

CONTRACT PROPERTY WORKSHOP SCHEDULE (CONTINUED)

4:00 p.m. SEMO/IPO/CO/CONTRACTOR INTERFACE

RON FINCHER
KSC INDUSTRIAL PROPERTY OFFICER

CONTRACT PROPERTY WORKSHOP
SCHEDULE *(CONTINUED)*

4:15 p.m. **PSCN CONTRACT**

MEL POTTS
PROPERTY ADMINISTRATION
BOEING SERVICE COMPANY, MSFC

FAR 45.302 BASIC FACILITIES POLICY

CONTRACTORS PROVIDE ALL FACILITIES THEY NEED TO PERFORM CONTRACTS WITHOUT COST TO THE GOVERNMENT

FACILITIES POLICY EXCEPTIONS
(FAR 45.302-1(a)(1)--(5))

1. *Operation of a Government-owned facility, or*

2. *Support industrial preparedness, or*

3. *General purpose items incorporated into ST or STE per contract, or*

5. *As otherwise authorized by law, or*

FACILITIES POLICY EXCEPTIONS
(CONTINUED)

(OLD WORDING)

4. Contractor submits statement of
inability or unwillingness to the CO,
and
the NASA center director determines
that the contract cannot be
fulfilled by any other practical means
or
that the public interest will be
served by providing the facilities.

FACILITIES POLICY CHANGE

New Exception 4:

- *o Unwillingness exception is removed*
- *o Contractor must provide evidence that private financing was sought*
- *o Center director must sign formal D&F*

WHAT ARE FACILITIES?
FAR 45.101

Government property consists of two basic types:

1. *Real property (Land, buildings, etc.)*
2. *Personal property*
   - a. *Material*
   - b. *Specially designed equipment/tooling*
   - c. *General purpose equipment (including commercially available tooling and test equipment)*

WHAT ARE FACILITIES?
(FAR 45.301)

FACILITIES are not only real property but also all general purpose equipment (PLANT EQUIPMENT).

PLANT EQUIPMENT (FAR 45.101) is not only manufacturing equipment but also such items as furniture, office equipment, computers, vehicles, and accessories to those items.

The definition has no dollar threshold!

CONTRACTOR ACQUISITIONS
(FAR 52.244-2)

WHEN A POLICY EXCEPTION EXISTS, contractor obtains authority to purchase a facilities item by notifying the CO under paragraph (a)(4) of Subcontracts clause if CO consents (paragraph (c)).

The requirement for CO consent to purchase facilities cannot be waived on the basis of having an approved purchasing system (see paragraph (d)).

No dollar threshold applies.

SCREENING
FAR 45.302-1(b)

Government excess lists must be screened before new facilities may be authorized.

For items $1000 and over, NEMS must be screened as well. (NFS 18-52.245-70)

The contractor submits a DD 1419 unless has self-screening authority.

CERTIFICATE OF NONAVAILABILITY
NFS 18-45.7102

Certificate of non-availability on DD 1419 is not CO consent.

Both are required.

Certificate of non-availability number from DD 1419 is now required on all DD 1342's, Block 22.

INSTALLATION-PROVIDED PROPERTY
NFS 18-52.245-71

- o Performance on NASA installation.
- o NASA keeps official records.
- o Contractor has user responsibility.
- o NASA buys all facilities items unless contract EXPRESSLY STATES contractor authority.

IPGP RECEIVING/REPORTING

- *Immediately report receipts to NASA property organization.*
- *Transfer accountability to NASA (via DD 1149 or other document).*
- *Tag should be ECN.*
- *If Alternate I to NFS 18-52.245-71 in contract, submit quarterly report of all acquisitions to CO and IPO.*

IPGP REPORTING TO NEMS

NO CONTRACTOR ACQUISITIONS PAID FOR WITH CONTRACT FUNDS SHOULD REPORTED TO NEMS USING THE "01" TRANSACTION EXCEPT BY NEMS SUB-INSTALLATION CONTRACTORS.

ON-SITE ACCOUNTABLE CONTRACTORS
NFS 18-52.245-74

- Clause is required when Code NIE approval to not use IPGP for an on-site contract is granted.
- Intended only for large, on-site service contracts.
- Imposes diluted version of installation reporting requirements.
- Contractor maintains the accountable records of all property used.

ON-SITE ACCOUNTABLE CONTRACTORS

If the contractor is accountable for property other than NEMS centrally reportable equipment, either additional property record systems must be used or NASA must retain accountability by also including the IPGP clause with its applicability limited to those non-NEMS items.

END

DATE

FILMED

DEC 20 1990